

NORFOLK COUNTY COUNCIL

ANNUAL REPORT

OF THE

COUNTY MEDICAL
OFFICER OF HEALTH

1919-20

With

PRÉCIS OF REPORTS 1915-1918

By

J. T. C. NASH, M.D., M.B., C.M., D.P.H., R.A.M.C.T.

NORWICH:

ROBERTS & Co., TEN BELL LANE

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Health Administration of the County of Norfolk.

Supervising Authority: NORFOLK COUNTY COUNCIL.

County Medical Officer of Health
Chief School Medical Officer
Chief Tuberculosis Officer } J. T. C. NASH, M.D., D.P.H., Shirehouse, Norwich

Clinical Tuberculosis Officer:

W. B. CHRISTOPHERSON, M.R.C.S., L.P.C.P., Tuberculosis Dispensary, The Walk, Norwich.

School Medical Staff.

Senior Assistant School Medical Officer:

KENWAY T. WILLIAMS, M.R.C.S., M.D.

Assistant School Medical Officers:

NEIL CAMPBELL, M.B., C.M. (Glasgow).

Miss M. HAMMOND, M.A., M.R.C.S., L.R.C.P.

Miss S. S. BRYCE, M.B., CH.B. (Glasgow).

L. D. STEPHEN, M.B., CH.B. (Edinburgh).

Inspector of Midwives
Superintending County Health Visitor } Miss M. FOWLER, The Shirehouse, Norwich.

Health Visitors:

Miss D. PARKER. Miss O. PARKER. Miss A. M. SPAUL.

School Nurses: 5 whole time. Part-time Health Visitors: 60 District Nurses.

Laboratory Assistant:

F. T. ALPE, Chemist and Bacteriologist.

Clerical Staff: Nine Clerks (5 appointed by the Education Committee).

The County is divided into 32 Sanitary Areas (2 Municipal Boroughs, 10 Urban Districts, and 20 Rural Districts), to each of which is appointed a District Medical Officer of Health, half of whose salary is refunded by the County Council. Sanitary Inspectors or Inspectors of Nuisances are appointed in each district, working under the direction of the District Medical Officer of Health. Half of the salary of these officers is also refunded by the County Council.

The following are the names and addresses of the District Health Officers.—

URBAN DISTRICTS.

MEDICAL OFFICERS OF HEALTH:—

Cromer	R. C. M. Colvin-Smith, M.B., Cromer.
Diss	H. M. Speirs, M.D., Diss.
Downham Market	G. F. Cross, M.B., Athol House, Downham Market.
East Dereham	D. Turner Belding, M.R.C.S., East Dereham.
King's Lynn, M.B.	P. G. Foulkes, M.B., M.R.C.S., L.R.C.P. (Acting Medical Officer of Health), King's Lynn.
New Hunstanton	B. G. Sumpter, M.B., New Hunstanton.
North Walsham	J. Shephard, M.R.C.S., Cromer Road, North Walsham.
Sheringham	J. E. Linnell, M.B., D.P.H., Sheringham.
Swaffham	H. Wynne Davies, M.B., M.R.C.S., L.R.C.P., Swaffham.
Thetford M.B.	A. Oliver, M.D., D.P.H., Market Place, Thetford
Walsoken	Harry Groom, M.D., 23, Hill Street, Wisbech.
Wells-next-the-Sea	Gordon Calthorp, M.B., Wells-next-the-Sea.

RURAL DISTRICTS.

Aylsham	Herbert H. N. Back, M.B., Ayle.
Blofield	Herbert H. N. Back, M.B., Ayle.
Depwade	F. N. H. Maidment, M.B., F.R.C.S. (Ed.), Harleston.
Docking	B. G. Sumpter, M.B., New Hunstanton.
Downham	G. F. Cross, M.B., Athol House, Downham Market.
East & West Flegg	W. Royden, M.R.C.S., Burgh St. Margaret, Great Yarmouth.
Erpingham	J. E. Linnell, M.B., D.P.H., Sheringham.
Forehoe	T. Lambert Lack, M.R.C.S., Hingham.

Freebridge Lynn
 Henstead
 Loddon & Clavering
 Marshland
 Mitford & Launditch
 St. Faith's
 Smallburgh
 Swaffham
 Thetford
 Walsingham
 Wayland
 West Lynn

W. J. Paramore, M.R.C.S., L.R.C.P., Great Massingham.
 S. H. Burton, M.B., F.R.C.S., St. Giles' Street, Norwich.
 J. Barr Stevens, M.D., Loddon, Norwich.
 S. R. Lister, M.D., Terrington St. Clement, King's Lynn.
 D. Turner Belding, M.R.C.S., East Dereham.
 S. H. Long, M.D., 31, Surrey Street, Norwich.
 B. D. Z. Wright, M.R.C.S., ~~The Old House, Coltishall.~~ *Houston St John*
 E. F. Rose, L.M.S.S.A., College Hill House, Attleborough.
 G. Cowan, M.B., D.P.H., Thetford.
 W. H. Fisher, M.B., Fakenham.
 E. F. Rose, L.M.S.S.A., College Hill House, Attleborough.
 T. O. Hutton, M.B., King's Staithe Square, King's Lynn.

URBAN DISTRICTS.

Cromer
 East Dereham
 Diss
 Downham Market
 New Hunstanton
 Sheringham
 Swaffham
 North Walsham
 Walsoken
 Wells-next-the-Sea
 King's Lynn M.B.
 Thetford

SANITARY INSPECTORS

Robert Crome, 16, Alfred Road, Cromer.
 Mr. W. Astley Morris, Council Offices, East Dereham.
 G. H. Jones, Victoria Road, Diss.
 George Rayner, The Green, Railway Road, Downham.
 Albert E. Smith, Town Hall, Hunstanton.
 F. Hale Smith, Council Offices, Sheringham.
 G. Edgar Fryer, The Shirehall, Swaffham.
 Thomas Wrigley, Cromer Road, North Walsham.
 Thomas M. Kerridge, 126, Norwich Road, Walsoken.
 Samuel Bloy, Wells.
 J. W. Shaw, King's Lynn.
 Wentworth Jones, Thetford.

RURAL DISTRICTS.

Aylsham
 Blofield
 Depwade
 Docking
 Downham
 Erpingham
 East & West Flegg
 Forehoe
 Henstead
 Loddon & Clavering
 West Lynn
 Freebridge Lynn
 Marshland
 Mitford & Launditch
 St. Faith's
 Smallburgh
 Swaffham
 Thetford
 Walsingham
 Wayland

H. W. T. Trotter, Aylsham.
 Claude King, The Workhouse, Lingwood.
 F. H. Bowden, Long Stratton.
 Arthur Berry Nowell, "Redmoor," York Avenue, Hunstanton.
 Captain S. C. Rigg, "Lynwood," Lynn Road, Wimbotsham, Downham.
 A. R. Tuddenham, St. Peter's Road, Sheringham.
 A. W. Hobbs, 2, Vanda Villas, Caister-on-Sea, Great Yarmouth.
 Frank T. Alpe, Middleton Street, Wymondham.
 J. B. Panks, Framingham Pigot, Norwich.
 C. W. Pritchard, Loddon, Norwich.
 Robert Walker, West Lynn.
 L. F. Beckwith, Gaywood, King's Lynn.
 J. T. Dewhurst, 2, Ely Place, Wisbech.
 B. E. Penny, Whinburgh, East Dereham.
 Thomas Fox, St. Faith's, Norwich.
 E. A. Dale, Ludham, Great Yarmouth.
 Sidney H. Taylor, Sporle, Swaffham.

W. O. Humphery, Norwich Street, Fakenham.
 Arthur Sayer, Rockland St. Peter, near Attleborough.

ANNUAL REPORT of the County Medical Officer of Health for the year 1919-20.

To the Norfolk County Council.

Sir Ailwyn Fellowes, Lady Suffield, and Gentlemen.

The Report I have the honour herewith to submit is chiefly a record for the year 1919, but many matters of urgency requiring attention, it has not been possible for me to write this Report until a very late date in 1920. Much is incorporated which will be common to the latter year. Further, I am unable to write a County Report until all the District Medical Officers of Health Reports have come to hand. Unfortunately a few of these were very late in coming in. If I could receive all the District Reports by April in the year following the year reported upon, I might be able to present my Report to the County Council in July. I hope the District Medical Officers of Health will all bear this in mind. If some—even one—does not come to hand until July, it is almost impossible for me to present my report until the end of the year, as my Report includes a digest of the District Reports, as well as an account of the health activities of the County Council. Some of the District Reports are meagre, and I have to supplement my information in other ways; this all means expenditure of time and energy, and tends to delay the production of the Annual Report of the County Medical Officer of Health.

New and important statutory duties of a medical nature have devolved upon County Councils in promoting the health of the people—including Maternity and Child Welfare, the Treatment of Venereal Diseases, the administration of the Milk (Mothers and Children) Order, etc. Prior to the commencement of the war, practically the only medical duties undertaken were in connection with Mental Disease and the Medical Inspection of School Children. It was not until 1919 that the Norfolk County Council seriously considered a Tuberculosis scheme, so that this huge undertaking had to be dovetailed in with the other new schemes, and has involved considerable congestion of work with which the Public Health Committee has had to deal. As was emphasised at a recent County Council meeting, so much new work in all directions has devolved upon the Council, that the congestion is not confined to one department, and the Council contemplate devoting an additional week-day to Committee work to relieve the situation.

It needs to be borne in mind that a County Annual Health Report not only has to deal with the health activities in which the County Council is itself engaged—but with the sanitary circumstances of all the constituent sanitary districts (32 in Norfolk) in the administrative area. It is not only for the information of the County Council, but for the Ministry of Health and others who have not the same intimate knowledge of the area. Further, it is expected to contain matter which will be useful to District Medical Officers of Health, and be a means of conveying information on health questions to the community at large. Such cannot be helpfully presented by mere dry statistics. Moreover, statistics are not infallible and need interpretation or judgment to define their limits and lessons.

The Report is divided into sections as desired by the Ministry of Health.

I have also prepared and appended brief précis of Reports for the years 1915, 1916, 1917, and 1918.

I have the honour to be

Your obedient servant,

J. T. C. NASH,
County Medical Officer of Health.

December, 1920.



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NORFOLK COUNTY COUNCIL.

REPORT of the Medical Officer of Health for the years 1915 to 1919 inclusive.

No Annual Reports of the County Medical Officer of Health for the Administrative County of Norfolk were published or printed for the war years 1915 to 1918 inclusive. A brief statement is now issued for each of these years.

1915.

The following district Medical Officers of Health were on active military service: Dr. Thomas (Swaffham, R.D.), Dr. Cross (Downham, U. and R.D.), Dr. Oliver (Thetford, M.B.), Dr. Back (Aylsham and Blofield, R.D.), Dr. Rose (Swaffham and Wayland, R.D.), Dr. Belding (East Dereham U.D., and Mitford and Launditch, R.D.). The last two were on duty in the County and at the same time continued, as far as practicable, their duties as Medical Officers of Health. Dr. Cowan (Thetford, R.D.) acted as deputy for Dr. Oliver, and Dr. A. Back for Dr. H. Back. Dr. W. H. Fisher (Medical Officer of Health, Walsingham, R.D.) arranged with his partner, Dr. Palin, to undertake alternately 3 months' duty in their civil practice and Medical Officer of Health duties, with 3 months' resident duty at the Norfolk and Norwich Hospital. Practically all the District Medical Officers of Health, as medical practitioners, undertook national service in connection with the Red Cross or V.A.D. Hospitals.

The County Medical Officer of Health, although holding a commission as Captain in the R.A.M.C., T., S.S., at the outbreak of war, was not mobilized. This, I gather, was due to the intervention of the L.G.B., it being thought that his local knowledge and official position would be of more value to the large numbers of troops quartered in the County of Norfolk. He thus worked without military emoluments, in his official capacity in co-operation with military medical sanitary officers, in his own County.

Civil Population of Norfolk in 1915.

Owing to the great demands for men and other disturbing circumstances, no ordinary estimate could be made, but by utilising the National Registration of the population of the County in the summer of 1915, the Registrar-General estimated that the population for the administrative County of Norfolk was 303,750. This, of course, was irrespective of the large military forces in the County.

Number of Births, 6,202. Birth rate calculated on the 1914 population (324,350)—19 per 1,000 population.

Net number of Deaths, 4,740. Death rate calculated on the estimate of population for 1915 (303,750)—15.6 per 1,000 population.

828 deaths in 1915 were of children under 5 years of age as compared with 733 in 1914.

2,395 deaths at age of 65 and upwards in 1915 compared with 2,063 in 1914.

The Zymotic Death Rate.

The death rate from Measles, Whooping Cough, Diphtheria, Diarrhoea, Small Pox, Scarlet Fever and Fever (Enteric and continued) was low, 0.48 on the 1915 estimated population. The gross number of deaths from the above Zymotic diseases was 147 as compared with 206 in 1914.

Influenza.

On the other hand Influenza was more prevalent, accounting for 108 deaths (1915), as against 47 (1914). Coincidentally respiratory disease deaths were in excess; 801 (1915) compared with 484 (1914).

Deaths from Pulmonary Tuberculosis were also in excess; 266 (1915) as against 221 (1914). The increased mortality from respiratory diseases and pulmonary tuberculosis were, no doubt, associated with the increased prevalence of Influenza—and were all fostered by the encroachment of billeted troops on already limited cottage accommodation.

The Phthisis death rate was 0.67. The Respiratory death rate, 2.65. The Cancer death rate was 1.34.

Infantile Mortality.

The Infantile Mortality was 98 per 1,000 live births. There were 608 deaths of infants under 1 year. The rise in the infantile mortality was chiefly under the heading of respiratory diseases—due in my opinion to two principal causes.

- (1) An abnormal amount of sickness (chiefly Influenza) in the early months of the year.
- (2) War exigencies requiring billeting of troops.

The latter may not seem very obvious, but the following considerations will indicate how they would act. Certain standards of floor space are required by military regulations for troops, and billeting officers (who are not medical sanitary officers) would be satisfied if these were met for the troops they had to make arrangements for, without enquiring too closely into what available accommodation there remained for the tenant family needs. The tenant cottagers, ignorant or unmindful of the evil effects of overcrowding and of deficient oxygen, tempted by the billeting money, would generally be indifferent to close packing of the family, nor would they sufficiently realise that the children would suffer from lessened maternal care, owing to the mother's time being largely given to cooking, tending and cleaning, for 2, 3 or more soldiers.

As regards sanitary inspection, the Sanitary Inspectors generally work to a standard of cubic space which is all too small, and which is much reduced by furniture, sloping roofs, etc. Further it is generally and officially thought that two children count as one adult for air-space. This, in my opinion, is a grave error. Children breathe more rapidly than adults. Even with increased air-space adequate ventilation is essential—but in small and crowded rooms where beds have to be placed against the window or chimney flue (if there is one) the tendency is naturally to close or block these because of the draughts. Stuffy, crowded, ill-ventilated rooms render the occupants (and particularly infants) more liable to suffer from respiratory diseases; and the lack of oxygen and of movement of the air, failing to remove the poisonous products of respiration, enormously increase their fatality under such conditions.

In the course of my own inspections of billets I always enquired into the accommodation for the usual occupants, and wherever I found this obviously insufficient, if I could not suggest reasonable arrangements for its amelioration, I advised the military authorities that the particular billet was detrimental to the public health.

Two other figures which indicated lessened maternal care and insufficient accommodation in 1915 were 56 infant deaths from convulsions (as against 39 in 1914) and 4 deaths from suffocation (overlying), none in 1914.

There were fewer deaths attributed to prematurity in 1915, but an increase in those attributed to atrophy, debility and marasmus, again suggesting lessened maternal care.

Such conditions prevailing, one welcomed the Notification of Births (Extension) Act, 1915, which made the Act of 1907 compulsory and came into force on September 1st, 1915.

The increase in the infantile mortality emphasised the wisdom of the Government in laying stress upon the importance of securing full provision for maternity and child welfare.

I duly prepared and submitted a scheme providing for the appointment of 6-8 Health Visitors, their work to be directed by the County Medical Officer of Health and supervised by the Lady Inspector of Midwives.

The Public Health Committee decided to proceed cautiously, and at first to appoint only one whole time Health Visitor to undertake work in the districts insufficiently provided with nurses. Miss Daniels was appointed and commenced on January 1st, 1916.

Infectious Diseases.

Scarlet fever was prevalent in a mild form with low mortality rate. Diphtheria and Enteric were not unduly prevalent. Generally the Zymotic death rate was low.

Cerebro-Spinal Fever.

This was the most interesting notifiable disease of the year, shewing a tendency to increase in England, apparently imported on more than one occasion from Canada. In the Administrative County of Norfolk there were 31 notifications (10 soldiers and 21 civilians). Of 20 civilian cases of which I have notes, 11 were adult females, 3 adult males and 6 children. Of the first 10 cases notified, 6 were soldiers, 1, the sister of a soldier (himself a victim) and 2 were females who were in contact with soldiers.

On March 31st I communicated with all District Medical Officers of Health suggesting they should advise their councils to seek the aid of a competent bacteriologist in suspected cases and to make arrangements for such assistance in good time.

As a result the services of Dr. Claridge, Pathologist to the Norfolk and Norwich Hospital, were arranged for in all districts where there was a likelihood of cases occurring.

The first chapter of the history of Cerebro-Spinal fever in Norfolk shewed 10 military cases and 12 civilian cases (9 female and 3 males), all of the civilians having, more or less, intimate relations with soldiers.

After a lapse of 6 weeks, 2 further civilian cases were notified. Both these were in billeted areas.

After a further period of 2½ months without notification, 1 military and 2 civilian (children) were notified.

After another interval of 2 months, 3 cases (all in one house) were notified. Contact, in the first case, with a soldier was established. The other two were home contacts.

One further case occurred in the person of a gentleman living near, and frequently in, Norwich, in which city cases and "carriers" existed.

The history of the incidence of the disease in Norfolk indicated a gradual transference from the military to the civilian sections of the population; the later cases indicating the establishment of a vicious circle.

The chief difficulty in dealing with outbreaks of Cerebro-Spinal fever is similar to that which occasionally arises in connection with some outbreaks of other diseases, such as Diphtheria or Enteric fever, and lies chiefly in the fact that for every known or notified case there are numerous apparently healthy "carriers" of the germ among the contacts. Hence the need for organised expert bacteriological assistance to detect the "carriers" so that some control and treatment may be applied.

In connection with Enteric fever, out of 63 notifications in the whole County area, 17 occurred in the Marshland R.D. These were a continuation of the 1914 outbreak, the first cases of which were not recognised as Typhoid fever. The District Council had not then provided for the bacteriological Widal serum test. When I investigated the outbreak I had a specimen of blood serum examined with a "positive" result. I wrote to remind the District Council that it was their duty to make provision for such aid to diagnosis, and the district Medical Officer of Health was subsequently empowered to have tests made in doubtful or suspicious cases. Most of the cases were secondary and directly traceable to contact with previous cases.

Puerperal Fever.

3 notifications, 2 deaths.

Isolation Hospital Provision.

Neither the local Sanitary Authorities nor the County Council made any additional provision. For cases of infectious disease occurring among soldiers, the military authorities made provision. In the Mitford and Launditch R.D. the Dowager Countess of Leicester generously provided accommodation for a temporary hospital at Weasenham in connection with an outbreak of Scarlet fever. This was in use about 6 weeks.

Disinfection.

At King's Lynn a steam disinfecter is provided. In other districts formalin or SO² is used.

Food Supplies.

Public Health (Milk and Cream Regulations) 1912.

The King's Lynn M.B. Council had 9 samples of milk and 3 of cream examined for the presence of a preservative. The samples were all reported as free from preservative.

In Thetford M.B., the District Inspector acting as Sub-Inspector to the County Council submitted 15 samples of new milk to the County Analyst.

The County Council employs 3 Inspectors of Food and Drugs who submit samples to the Public Analyst. The Annual Report of the Public Analyst for the County of Norfolk for the year ending 31st March, 1915, shewed that a grand total of 498 samples (which included 347 samples of milk, 63 samples of butter, 4 samples of preserved cream and 2 of cream) had been submitted. Of these, 61 samples (59 milk, 1 cream and 1 baking powder) were reported adulterated—the percentage of adulteration being 12.2. All the above samples of milk and cream were analysed for the presence of preservatives. 29 samples of butter had boracic acid in excess. 1 sample of cream had added boracic acid 19 gr. per lb. 1 sample of milk had added boracic acid 1.1 gr. per pint. 1 sample of milk adulterated with .006 per cent formaldehyde. Prosecutions were ordered in these cases by the Public Health Committee, resulting in a fine of £1 with £3 10s. costs in the formaldehyde case, but only fines of 1/- with costs under £1 in each of the excess Boracic Acid samples.

In all under the Sale of Food and Drugs Acts, 1875-1899, 41 prosecutions were ordered, and 14 cautions administered. The majority of the cases for prosecution being milk deficient in fat and added water.

Water Supply.

Full details given in former reports and in my report for 1919, *seq.*

The following notes are culled from the district reports for 1915:

Swaffham U.D. The water supply is from a well 165 feet deep with an extending bore 65 feet deep, whence the water is pumped from the chalk into a reservoir for distribution to the town.

Walsoken U.D. The Marham Water continues to be more and more used in all parts.

North Walsham. 913 houses and shops are supplied from the Council's mains.

Depwade R.D. No public water service. Mostly shallow wells. Factories and Maltings obtain good supplies from deep borings. In many villages cottagers have to rely upon pond water. 8 samples chemically analysed, 7 passed. 2 samples bacteriologically examined, water condemned. In each case suspicions were aroused on the occurrence of Typhoid fever near by.

Docking R.D. 29 well waters analysed, 12 polluted—5 wells closed, 7 cleaned and repaired

E. and W. Flegg R.D. Samples analysed 13 Results, 2 fresh water supplies provided from Yarmouth W. W. Coy., or old wells cleaned out (4). 2 wells closed.

West Lynn R.D. A water cart distributes water from the King's Lynn mains.

St. Faith's. The County Medical Officer being requested by the military to report on the water supplies of intended billets, he arranged a visit with the District Medical Officer of Health and Sanitary Inspector. This resulted in improved supplies at Horsford Low Farm; St. Faith's West Farm and Elm Farm; Rackheath, Goodley's Farm and Spink's Farm; Sprowston, Dawson's Farm, the Norwich Water Works Co. new supply.

Scavengering.

Some Annual Reports make no reference, others such as E. Dereham, mention the substitution of sanitary bins for old ashpits. N. Walsham collects twice weekly in the centre of the town and has increased its area for collection. Generally the reports record the work as satisfactorily done, but the Thetford R.D. report again states that no system of scavenging has been adopted, while the Docking R.D. report states that the Council decided to defer action until after the war

Supervision of Premises.

Records of inspection are given, but no special comment is made.

Housing and Town Planning Act.

In most districts, owing to the war, the systematic inspection of houses was in abeyance, and it was found difficult, or impossible to have repairs effected.

At Wells-next-the-Sea U.D. 20 cottages in Northfield Lane were erected.

Pollution of Rivers, etc.

The outstanding feature of the year was the flooding of the Southery area, Downham R.D. by the bursting of the bank of the Ouse. 81 families were rendered homeless. Some concern was felt as to the pollution of the Ouse when the stagnant water was pumped back into the river, and the adjoining inhabitants were duly warned as to the risks of drinking river water. Similar conditions affected the Feltwell area, Thetford R.D.

Drainage and Sewerage.

Downham Market. The completed sewerage scheme provides two ram pumps (each throwing 3,000 gallons per hour) at the Pumping Station. The sewage is pumped into septic tanks whence the effluent flows to humus and filter beds, thence the final effluent passes to the river. The sludge is dried and dug in. Storm water is dealt with by two other pumps, throwing respectively 25,000 and 15,000 gallons per hour.

Midwives Act and Maternity and Child Welfare.

1207 of the 6,173 births, barely 20 per cent., were attended by midwives. Medical help was sent for in 120 instances, as follows.

Antenatal. 16 (13 abortions).

Natal. 51 (A.P.H., 3; Pl. Pr., 1; Difficult L., 12; Malpresentation, 9; Pl., 9; P.P.H., 3; Rup. P., 14).

Post Natal. 53 (16 M., 37 Is.) The 16 mothers all did well, 10 of the 37 infants died.

Still Births, 33 (18 premature). The 15 full term still births included 2 hydrocephalus, 1 monster, 1 prolapse of cord, 22 B.B.A., 2 breech 2 macerated and 3 were each one of twins.

306 visits of inspection were paid to midwives and 130 visits to infants by Miss Fowler, who also held 8 meetings for midwives and 3 for mothers for collective instruction. One midwife was reported to the C.M.B.

In February, 1915, I made a special report on Maternity and Child Welfare, advocating a scheme similar to that in existence in Hertfordshire. In August I again reported when the Notification of Births (Extension) Act, 1915, came into force. The County Council resolved that subject to the approval of the L.G.B., the services of Miss Fowler (Lady Inspector of Midwives) be utilised as Health Visitor, and that an additional Health Visitor be appointed. This appointment was duly made, and the Health Visitor commenced work on January 1st, 1916.

PRÉCIS OF ANNUAL REPORT

For the Year 1916.

Population.

The population of the Administrative County of Norfolk, as estimated by the Registrar-General for Death-rates (excluding males of military age), was 291,662.

The population calculated by the Registrar-General for birth-rate was 317,334.

Births. 6,115 (males, 3,121, legitimate, 2,853, illegitimate, 268; females, 2,994, legitimate, 2,767, illegitimate, 227). Birth rate, 19.26.

Deaths. 4,285. Death rate, 14.69. Corrected death rate, 11.78.

Deaths of Infants under 1 year, 433. Infantile Mortality per 1,000 births, 70.8.

Zymotic Death rate, 0.40.

Phthisis Death rate, 1.03.

Tuberculosis (all forms) Death rate, 1.28.

Cancer (all forms) Death rate, 1.57.

Maternity and Child Welfare.

My report on this work during 1916 was printed and published in February, 1917. Miss Fowler, whose main duties are those of Inspector of Midwives, made 78 first visits to babies, and 165 subsequent visits, and 23 visits to expectant mothers. Miss Daniels, who commenced work on January 1st, 1916, was quartered at King's Lynn, and assisted in the initiation of a Voluntary I.W. Centre in that town which opened in May, 1916. Miss Daniels acted as Health Visitor for King's Lynn and the surrounding country parishes. 428 first visits were made in King's Lynn and 707 in the "country" districts. At the time of the first visit about 60 per cent. of the children were wholly breast fed and about 20 per cent. wholly bottle fed. The remaining 20 per cent. had bread sop in addition to the breast. The pernicious custom of giving bread sop to young infants appeared to be wide-spread. The Health Visitor prevailed upon several mothers to discontinue the use of bread sop. Ten Midwives acted as Health Visitors for following up babies born in their midwifery practice—but four ceased work under the County scheme, two of them not sufficiently satisfactory to justify the continuance of their employment. In many instances the advice given by the Health Visitors as regards feeding and clothing was followed, but it was hardly to be expected that long ingrained ideas could be universally superseded. In many cases, especially as regards illegitimate children, the infant is entrusted to the grandmother whose ignorance is often as profound as her obstinacy.

The Swaffham U.D.C. also started a small Infant Welfare Centre at which the Medical Officer of Health and a Health Visitor, appointed by the U.D.C., attended once a month.

Infant Mortality.

The constitutional factors of the year were generally favourable to infants and the infant mortality for the Administrative County was comparatively low, viz., 70.8 per 1,000 births.

I reported on the Local Government Board Circular, dated September 23rd, 1916, and laid before the Public Health Committee two schemes (a) for six additional whole time Health Visitors (b) for two additional whole time Health Visitors, the remainder of the work to be undertaken by midwives and nurses of the Norfolk Nursing Federation. The latter scheme was the one favoured by the Committee.

In view of two factors Annual Reports of Medical Officers of Health were greatly modified by the Local Government Board for the year 1916. (1) By consideration of the question of affecting further economies as regards annual reports. (2) By the Registrar-General publishing mortality statistics for sanitary, instead of for registration districts.

This latter factor saved District Medical Officers of Health the labour of compiling separate statistics, and as many inaccuracies used to occur in the district reports, this central change is all for the better. Consequently the Local Government Board no longer send to each Medical Officer of Health the four tables of sickness and mortality to be filled up as was the custom for annual reports up to, and including, 1915, but Medical Officers of Health are not desired to refrain from further analysis of the Registrar-General's figures.

The Registrar-General supplied the County Medical Officer of Health with a copy of the table of deaths of residents in each area in the County, to be transmitted to the respective District Medical Officers of Health, the deaths being classified under 29 headings with distinction of sex, but without age classification. The County Medical Officer of Health was also furnished with a copy for his own use. Later in the year the County Medical Officer of Health was supplied with a classified statement of the 29 causes of death, distributed in age groups, for the aggregate urban and the aggregate rural districts in the County. Each District Medical Officer of Health was also supplied through the County Medical Officer of Health with a statement of births, distinguishing age and legitimacy, and deaths under one year of age.

The preparation of the tables by the Registrar-General within a reasonable time from the end of the year to which the figures relate depends in large measure upon the completeness and expedition with which Medical Officers of Health return the transferable death slips forwarded to them quarterly from the General Register Office, through the County Medical Officer of Health, a time limit of one month being allowed.

Of course, these arrangements do not preclude Medical Officers of Health from receiving weekly returns of deaths from the local registrar, which are necessary for the Medical Officer of Health to be in a position to have immediate enquiries made as to certain deaths. The weekly death returns (especially those of infants) should be studied by the Medical Officer of Health, and periodically analysed, and an annual analysis of infant deaths should be incorporated in the Annual Report.

Having regard to the necessity for strict economy in the use of paper, and in demands on printing establishments, the Local Government Board notified Medical Officers of Health that interim reports only should be made for the year 1916, confined to essential and urgent matters which have affected the public health during the year, together with any exceptional administrative measures taken or recommended by the Medical Officer of Health.

During the year 1916 I received, on behalf of the County Council, only three Urban and five Rural District Council Reports. All were abbreviated. The Urban Districts sending in reports were, Walsoken, Downham Market and Hunstanton. The Rural Districts were those of Docking, Downham, Loddon and Clavering, Swaffham, and West Lynn.

Nothing calling for comment arises in these reports beyond noting that a scavenging system was inaugurated in Ringstead (Docking).

Infectious Diseases.

A remarkable experiment was introduced by the Local Government Board in making Measles and German Measles notifiable diseases. I have often offered arguments against ordinary notification of these diseases as they come too late to be of any use in dealing preventively with measles. On the other hand, school notification by teachers, together with the records in the School Measles registers, which I have instituted, enable effective action to be taken in many instances. I am confident that ordinary notification will prove a somewhat costly failure, but will watch the results of the experiment with interest, and am, of course, open to conviction if my views are proved mistaken.

Enteric Fever.

Notification from Walsoken U.D. being in excess in the latter part of November, I arranged to enquire into the matter, and fortunately selected a day on which a medical inspector of the Local Government Board had independently arranged to visit Wisbech with the same object in view. We went carefully into all the circumstances connected with the outbreak. Apparently most of the earlier cases were connected with a milk supply—the purveyor himself a victim of the disease. Most of the latter cases were secondary to previous cases. We pressed the provision of isolation accommodation, and adequate temporary arrangements were made for this purpose.

The Zymotic Death Rate.

0.40 was an improvement even on the low rate for 1915 (0.48).

The chief causes of death recorded were heart disease, cancer, respiratory diseases and tuberculosis diseases. On the whole the year was a healthy one.

Tuberculosis.

The deaths from pulmonary tuberculosis recorded numbered 302. (146 M., 156 F.): forms of other tuberculosis diseases, 71.

The Norfolk Insurance Committee had 193 applications for Sanatorium treatment: 84 had Sanatorium treatment, 91 had primary domiciliary treatment, 54 had secondary domiciliary treatment. The Insurance Committee had 83 shelters and provided 143 patients with shelters for varying periods. 17 beds in Sanatoria were in occupation on December 31st, 1916. Of 100 patients who were sent to Sanatoria in 1915 and reported on in 1917, 47 were at work, 32 dead, 10 stationary, 10 removed out of the County and 1 relapsed.

Notification of Births Acts.

5281 births notified; 1222 attended by Midwives, 422 by Maternity Nurses.

Midwives Act.

128 Midwives practised; 12 left during the year, 3 resigned and 2 were removed from the Roll by the C.M.B. 34 Midwives were bona fide, 2 were fully-trained nurses, 6 had from 1-2 years training and about 86 about 1 year's combined training. Half the county had neither nurse nor midwife.

155 medical help records received (mother 107, infant 48).

26 still births included 8 full term, 17 premature, 12 macerated, 1 monster.

Venereal Diseases Act.

In conjunction with the Local Authorities for the City of Norwich, the East Suffolk County Council and the County Borough of Great Yarmouth, the Norfolk County Council entered into provisional arrangement for a V.D. centre at the Norfolk and Norwich Hospital in accordance with a scheme prepared by the County Medical Officer of Health.

PRÉCIS OF ANNUAL REPORT

For the Year 1917.

Maternity and Child Welfare.

Three whole time Health Visitors were appointed by the County Council in addition to Miss Fowler, Inspector of Midwives, who is Superintendent Health Visitor under the direction of the County Medical Officer of Health. Miss Fowler is also County Superintendent of the Norfolk Nursing Federation, on the Committee of which the County Medical Officer of Health serves. By arrangement, with the approval of the L.G.B., the N.N.F. in April, 1917, undertook infant health visiting officially, the work being carried out by 45 nursing associations. In addition, six non-affiliated nursing associations, and two independent practising midwives undertook similar work under the County scheme.

Kenninghall, Castleacre, Harleston, and Diss Nursing Associations started weighing centres.

The two voluntary Health Visitors in the Wayland R.D. resigned during the year.

The voluntary I.W.C. at King's Lynn progressed satisfactorily, thanks materially to the energy and zeal of Miss Pratt, the Hon. Secretary.

The scope of the small centre started by the Swaffham U.D.C. should be widened. The Council lost the services of the Medical Officer by death, and of the Health Visitor by resignation—but the vacancies have since been filled.

Miss Fowler reports that she finds that the District Nurses are able, as Health Visitors, to keep in intimate touch with the mothers and babies, and that the majority work quite satisfactorily.

As regards the County whole-time staff, Miss Fowler in the course of her supervising work paid 7 ante natal visits, and visited 191 infants with the Nurse Health Visitors.

The County Council's whole time staff of Health Visitors (three besides Miss Fowler) made 88 ante natal visits, 1,682 first visits to infants, 3,992 subsequent visits to infants under 1, and 148 first visits and 1,189 subsequent visits to children between 1 and 5 years.

The work done by the Nursing Federation included 635 first visits, and 3,595 total visits to children under 6 years of age, and 1,235 ante natal visits.

The work by the two voluntary Health Visitors in the Wayland R.D. amounted to 64 first visits and 197 total visits to infants under 1 year, and 7 ante natal visits.

The total for the County area in 1917 thus amounted to 1,323 ante natal visits; 2,381 first visits and 7,460 subsequent visits to infants under 1 year, and 1,337 visits to children between 1 and 5.

Up to 3 months of age about 60 per cent. of the infants visited were entirely breast fed. Many mothers, by tradition, are in the habit of giving babies bread sop in addition to the breast. In some instances the Health Visitors were able to convince the mothers that this was not physiologically sound and induced them to breast feed only.

Birth Rate.

This materially declined during the year, and was 15.62 per 1,000 population. Only 4,888 births were registered (males, 2,546, females, 2,342). The birth-rate was calculated on the population estimated by the Registrar-General. Births notified, 4,284 or 87.6 of the registered births.

Death Rate.

The nett death-rate was 15.00. The corrected death-rate (standardised or corrected for age and sex) 12.03.

Infantile Mortality.

The deaths of 444 infants under 1 were registered. The infant mortality per 1,000 births was 90.83.

The Zymotic death-rate per 1,000 estimated population was 0.41

The Phthisis death-rate per 1,000 estimated population was 0.99.

The Tuberculosis (all forms) death-rate per 1,000 estimated population was 1.28.

The Cancer death-rate per 1,000 estimated population was 1.47.

Very few reports of District Medical Officers of Health came to hand for the year 1917. The few that did were chiefly confined to local statistics which are of small value. The Medical Officer of Health, Thetford R.D., again called attention to the need of a scavenging system for East Harling, Feltwell and Methwold.

Deaths.

15 deaths in the County were ascribed to Enteric Fever; 32 to Whooping Cough; 34 to Diphtheria; 128 to Influenza; 8 to Rheumatic fever; 231 to Pulmonary Tuberculosis; 24 to Tuberculous Meningitis; 43 to other Tuberculous affections; 248 to Cancer; 520 to organic Heart Disease; 8 to Cerebro-Spinal Fever; 2 to Poliomyelitis.

Heart disease as a cause of death was second only to respiratory diseases (Bronchitis, Pneumonia, etc.) The disproportion of deaths from Cancer and Tuberculosis diseases is also evident.

There is some evidence that denatured food may play a part in the causation of these principal causes of death, and renewed investigation and research in this direction is indicated.

Venereal Diseases Act.

The Norfolk County Council, in conjunction with the local authorities for the County Borough of Norwich, the East Suffolk County Council, and the County Borough of Great Yarmouth, with the approval of the L.G.B., entered into an agreement with the Norfolk and Norwich Hospital, which undertook to provide a Clinical Medical Officer, a Pathologist and Laboratory, beds in the hospital for patients of either sex, a local central clinic at the hospital and necessary drugs, etc. The cost for the first 12 months working of the scheme was estimated at £1,600—the respective authorities agreeing to a reasonable division of the expenses, in the proportion of two-fifths for the City of Norwich, and one-fifth for each of the other authorities, subject to revision. The Venereal Diseases Department at the Norfolk and Norwich Hospital started work on April 1st, 1917. I circularised all medical practitioners in the County area informing them of the facilities open to them, and that they and their V.D. patients would be able to have laboratory assistance free of charge.

The following summary of the work done during the first 9 months ending December 31st, 1917, is based on the quarterly returns made by the Medical Officer of the Clinic (Dr. S. Long).

A. Laboratory Work.			Total.	From Norfolk area
(a) Number of specimens examined at Clinic	...	...	40	7
(b) Specimens sent to Pathological Laboratory	...	...	134	21
1. For detection of Spirochetes	...	...	11	—
2. For detection of Gonococci	...	...	51	8
3. For Wassermann test	...	...	71	13
B. Medical Work:—				
Number of new patients attending the Clinic	...	...	122	25
1. Gonorrhœa.	M	...	24	1
	F	...	15	6
2. Syphilis	M	...	27	8
	F	...	48	10
3. Soft chancre	M	...	3	—
	F	...	—	—
4. Not suffering from V.D.	M	...	1	—
	F	...	4	—
Total number of attendances	...	...	761	124
No. of patients receiving in-patient treatment	...	...	80	19
No. of "patient days" for these patients	...	...	385	94
No. of patients treated by Salvarsan or substitutes	...	...	78	19
No. of doses given of these preparations	...	...	132	33

SPECIAL REPORTS were made by the County Medical Officer of Health on Isolation Hospitals, Sanitation of Burnham Market, Typhoid Fever in Ringstead, Sanitation of North Walsham.

Food and Drugs Act.

An interesting prosecution took place in 1918 in connection with a food preparation called "Liquid Eggs." Mr. A. Robinson, inspector, submitted a sample to the County Analyst, who found boron preservation as Boric Acid present in the proportion of 1.18 per cent., equivalent to 82.6 grains per lb. The County Medical Officer of Health gave evidence that from a health point of view the objections to the introduction of preservatives into articles intended for food were:—

(1) They enabled stale articles to be foisted on the public—and though capable of retarding the development of certain decomposition bacteria, they could not be relied upon to destroy all bacteria which might be injurious to health in stale food.

(2) Certain people with delicate digestion, such as infants and invalids, might suffer directly from an excess of preservative, and even individuals apparently in good health might be affected.

(3) It was essential to prohibit, or strictly limit the amount of preservative in preserved foods since people might consume more than one kind of preserved food at a time, and so receive in the aggregate a deleterious amount of preservative.

The following were the results of prosecutions under the Act in 1917:—

Sample.	Adulteration or Default.	Penalty.
Eastern Division: Inspector A. Robinson.		
Milk	11 per cent added water	£1 including costs
Milk	10 $\frac{3}{4}$ per cent. added water	Dismissed
Milk	12 per cent. deficient fat	1s. and 7s. 9d. costs
Margarine	No printed wrapper	7s. 9d. costs
Milk	22 per cent. deficient in fat	£2 including costs
Milk	17 per cent. deficient in fat	10s. including costs
Milk	6 per cent added water	
Milk	10 per cent. deficient in fat	Dismissed
Milk	38 per cent. deficient in fat	£1 and 4s. costs
Western Division: Inspector W. B. Barry.		
Milk	26 per cent. deficient in fat	6s. 6d. Walsoken
Milk	16 per cent. deficient in fat	Dismissed Heacham
Milk	12 per cent. deficient in fat	Dismissed Swaffham
Milk	13 $\frac{1}{2}$ per cent. added water	£5 Holt
Milk	14 $\frac{1}{4}$ per cent. added water	£10 17s. 6d. Walsoken
Central Division: Inspector J. Ryley.		
Milk	14 $\frac{1}{4}$ per cent. added water	£5
Milk	25 $\frac{1}{2}$ per cent. added water	£15
Milk	22 per cent. devoid of milk fat	10s.
Milk	14 per cent. devoid of milk fat	£5

Milk and Cream Regulations.

A prosecution based on the Public Analyst finding 72 grains per lb. of Boric Acid in a sample of cream submitted by Inspector Ryley resulted in the substantial fine of £10 (including costs £3 0s. 8d.)

Infectious Diseases.

Diphtheria was more than usually prevalent in 1917, the incidence being chiefly in North Walsham, King's Lynn M.B. and Thetford M.B. among Urban Districts, and in Freebridge Lynn and Docking Rural Districts in the late summer and early autumn.

Cerebro-Spinal Fever. 24 cases were notified during the year of which 14 were military cases.

Poliomyelitis. 6 cases notified all widely separated in different sanitary districts.

Puerperal Fever. 3 notifications.

Incidence of other diseases does not call for comment in this *precis*.

Isolation Hospital Accommodation.

The Blofield R.D.C. wrote urging on the C.C. to make provision for ambulance and isolation. I reported to the Public Health Committee as follows, on December 1st, 1917:—

Frequent comment has been made by the military in different parts of the country as to the lack of hospital isolation accommodation in this County.

As an isolation hospital can only fulfil its functions properly if it is always ready for an emergency, and as the incidence of infectious disease is very unequal in the different constituent sanitary districts I am still strongly of opinion that one Isolation Hospital centrally situated, always kept in a state of preparedness with a small resident staff, and a motor ambulance for the conveyance of the patients from any distance, would prove more serviceable in a rural county like Norfolk than the attempts hitherto made by a few District Councils to provide small isolation hospitals for their own districts, which often are never used at all, as they are not kept in a state of readiness for the primary cases.

Provided the site was ample and accessible, and so situated that all requisite sanitary arrangements could be carried out, a central County Isolation Hospital could be started on a small scale, and added to as the demand for accommodation increased. The history of Isolation Hospitals throughout the country for years past indicates that as their advantages become apparent they rapidly gain further appreciation, so that eventually, it becomes a point of administration to decide what cases shall not be admitted because of the demand for admission. If we started with one County Isolation Hospital for cases of scarlet fever, diphtheria, and enteric fever, time would show whether any further hospitals for isolation purposes were advisable.

PRÉCIS OF ANNUAL REPORT

For the Year 1918.

Administrative County of Norfolk. Census (1911) Population, 321,733. Estimated by Registrar-General for 1918, for birth-rate, 315,540.

Births. Registered: (1) Legitimate, 4,767; (2) Illegitimate, 544; (3) Total, 5,311. Notified, 4,302 (of which 52 were still births. Midwives notified 1,042 births, parents and doctors 3,260

Infant Deaths.

(1) Legitimate, 326; (2) Illegitimate, 70; (3) Total, 396.

Infantile Mortality. (1) Legitimate, 68.8; (2) Illegitimate, 128.6; (3) Total, 75 per 1,000 births.

The higher mortality usual among illegitimate children is again illustrated.

Midwives.

Number practising in the Administrative County. (1) Trained, 90; (2) Untrained, 20; (3) Total, 110.

Visits of inspection to Midwives by Inspector of Midwives. (1) Routine, 299; (2) Special, 25.

The Midwives attended about 20 per cent. of the registered births.

Health Visitors.

Three whole-time Health Visitors employed by the County Council. In addition, some 60 Midwife-nurses follow up their cases.

Visits paid by Health Visitors during the year (a) by whole-time Health Visitors to Expectant mothers, 117; Infants under 1, first visits, 1,286; Total Visits, 7,536; Children 1—5, Total Visits, 799. (b) By part-time Health Visitors (Midwives and Nurses): Expectant mothers, 663; Infants under 1 and Children 1—5, 5,023. Total visits paid: Expectant mothers, 780, Children under 5, 13,358.

Owing to resignations and new appointments there were not 3 whole-time Health Visitors working throughout the year.

Death Rate.

Population estimated for 1918 for death-rate by Registrar-General, 281,616. Total deaths, 4,654 (males, 2,224; females, 2,430). Death-rate, 16.52. Corrected for age and sex, 13.24.

Causes of Death.

Of separate defined causes of death, Influenza was the most potent in 1918, the whole world being swept by devastating epidemics; the autumnal epidemic being most severe, Norfolk paying a proportional toll. 749 (337 males, 412 females) deaths were ascribed to Influenza among the civilian population, or about 16 per cent. of the total deaths. To them must be added a considerable proportion of the deaths ascribed to Bronchitis, Pneumonia, and Pulmonary Tuberculosis, all of which causes of deaths were greatly aggravated and accelerated by Influenza—though the primary cause of death was given under one or other of the three headings. 305 deaths were ascribed to Bronchitis, 228 to Pneumonia, and 337 to Pulmonary Tuberculosis. As regards the last named the deaths were about one-fourth in excess of the usual annual average, and it is tolerably certain that this excess was primarily due to concurrent or prior Influenza lowering vital resistance. Influenza was the predominant constitutional factor in the abnormal death-rate of 1918.

Zymotic Disease.

The ordinary infective diseases, deaths from which are added together in calculating the Zymotic death-rate, accounted for the following: Enteric Fever, 6 deaths; Measles, 20; Scarlet fever, 4; Whooping cough, 70; Diphtheria, 24; Diarrhoea, 19. All combined gave a Zymotic death-rate of only 0.5 per 1,000 estimated civilian population, as compared with a death-rate of 2.6 from Influenza, without taking into account the concomitant respiratory diseases.

Cancer claimed 443 victims; 503 deaths were recorded as due to heart disease; 10 deaths were ascribed to Rheumatic fever; 6 to Puerperal fever; 5 to Cerebro-spinal fever; and 4 to Poliomyelitis.

Tuberculosis.

Notifications; 233 Pulmonary (males, 103, females, 125); 101 Non-pulmonary (males, 47, females, 54). Deaths; Pulmonary, 337; Non-pulmonary, 84.

The notifications of Pulmonary Tuberculosis for age and sex were:—

Age	Under 5	5-15	15-35	35-45	45-65	65 and over
M	2	7	56	20	22	1
F	1	15	43	17	21	5

The age and sex groups for Non-pulmonary Tuberculosis notifications were:—

Age	Under 5	5-15	15-35	35-45	45-65	65 and over
M	8	17	18	3	—	1
F	3	17	26	4	3	1

Sanatorium benefits under the Insurance Act through Norfolk Insurance Committee:—

	1917	1918
No. of Applicants	203	252
Recommended for primary Sanatorium treatment	83	127
Recommended for Secondary Sanatorium treatment	3	18
Recommended for Primary Domiciliary treatment	90	95
Recommended for Secondary Domiciliary treatment	48	78
No. of patients provided with shelters	146	151
No. of shelters owned by Committee	88	88
No. of beds occupied at Sanatoria on 31st December	18	27

Notification of Infectious Disease.

4,853 Measles, 331 Diphtheria. 196 Scarlet fever. 55 Erysipelas, 50 Enteric fever, 11 Cerebro-spinal fever (8 military), 6 Poliomyelitis, 6 Ophthalmia neon, 1 Puerperal fever, 1 Enceph lethargica.

North Walsham felt the effects of insanitary conditions (poor housing, lack of proper drainage, and lack of isolation hospital accommodation) in endemic diphtheria (24 cases notified in 1917 and 54 in 1918).

As usual, the notification of absentees from Elementary Schools, which I inaugurated in 1908 proved of immense value in enabling early preventive action to be taken with Measles, Scarlet fever, and Diphtheria.

A mild epidemic of Typhoid fever at Hunstanton was the subject of a special report by the District Medical Officer of Health, and of a paper I contributed to "Public Health," January, 1919. The main interest was the strong presumption of a chronic "carrier" of many years standing.

Disinfection.

The Forehoe Rural District Council purchased a Thresh Emergency Disinfector.

Dysentery.

I investigated an outbreak at the German Prisoners of War Camp, Kenninghall. 36 cases, 2 deaths. Shiga's bacillus responsible, probably carried through a defective drain which was found near the laundry well, water from which had been pumped into the drinking water cistern, owing to the drinking water well breaking down.

Venereal Diseases.

The Venereal Disease Clinic at the Norfolk and Norwich Hospital is appreciated, several patients making voluntary contributions towards the work. It is evident that the provision made is a valuable further safeguard. The number of cases of Syphilis seeking treatment, compared with the number of cases of Gonorrhoea, suggests either an actual increase in Syphilis because of the war, or that Gonorrhoeal victims are still ignorant or careless in seeking advice and treatment.

(a) LABORATORY WORK—	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total for the Year
1. Number of Specimens Examined at Clinic					
(Norfolk County Cases) ...	4	3	—	—	7
2. Specimens sent to the Laboratory ...	36	26	55	34	151
(b) MEDICAL WORK—					
Number of New Patients attending Clinic ...	14	9	10	8	41
1. Gonorrhoea ...	{ M 2	1	2	—	5
	{ F 3	—	1	3	7
2. Syphilis ...	{ M 5	1	2	—	8
	{ F 4	6	4	3	17
3. Soft Chancre ...	{ M —	—	—	—	—
	{ F —	—	—	—	—
4. Not Sufferers from Venereal Disease	{ M —	—	—	1	1
	{ F —	1	1	1	3
Total Attendances (1, 2, 3, 4), (Old and New) ...	88	113	97	73	371
Number of Patients receiving In-Patient Treatment	12	10	12	5	39
Number of Patient Days for these ...	80	71	88	39	278
Number of Patients treated by Salvarsan Substitutes	12	10	12	5	39
Number of Doses given ...	31	36	43	24	134
Number of Norfolk Patients treated during the year 1918—					
Syphilis { M 14					
{ F 26	Gonorrhoea { M 6				
	{ F 10	Other { M 1			
		{ F 3			

Every practitioner in Norfolk was circularised when the V.D. Clinic was started. In view of the decreasing figures towards the end of the year I determined to circularise them again.

Housing.

Systematic inspection under the Housing Acts was in abeyance in most districts because of the war, but

In Forehoe R.D. an inspection of every home under £8 rental was made.

In West Lynn R.D. two ship building firms started work and the question of housing accommodation in connection with these needs consideration.

A considerable increase in the population of Walsoken is anticipated in view of the recent establishment of a Jam Factory in Wisbech, and housing requirements in connection with this needs consideration.

A housing inquiry by Mr. E. W. Moss-Blundell, on behalf of the Agricultural Wages Board showed that housing conditions in Norfolk, though we know how imperfect in many localities, compared favourably with a neighbouring county.

Maternity and Child Welfare Act, 1918.

The County Council referred the administration of this Act to the Public Health Committee. Four ladies and a member of the medical profession were co-opted to serve with the Public Health Committee as a Maternity and Child Welfare Committee. As a first step it was decided to consider the provision of additional midwifery and nursing centres.

Statistics of visits given on p. 1.

Weighing Centres started at Diss, the Queen's nurse acting as Health Visitor.

Grants were allowed by the C.C. to Earsham and Marsham District Nursing Associations.

By request of the L.G.B., I prepared a return of midwifery provision in Norfolk Urban Centres, similar to the return I made for Rural Areas previously.

There was great difficulty in securing nurses during the year.

Forehoe R.D.C. appointed a Maternity and Child Welfare Committee and a Health Visitor (Miss Young). The work is carried on in conformity with the County scheme.

The voluntary I.W.C. started at North Walsham in 1917, was not too well organised or supported, and partly on this account and partly because of Whooping Cough and Diphtheria in the town, was closed in the Autumn of 1918, with the intention of making a fresh start in 1919.

The Borough of King's Lynn appointed a Health Visitor to divide her time between infants and school work. Between 13th April, 1918, and March 31st, 1919, she made first visits to infants under 4 weeks, 277. Total visits to children under 5 years, 1032. In addition she made 372 visits in connection with Influenza, and attended weekly at the I.W.C. The Medical Officer of the Clinic has now a more suitable room, and a full L.G.B. grant was allowed for the work of the previous year.

The Swaffham U.D.C.'s small I.W.C. lost, by death, its Medical Officer (Dr. Thomas), and by resignation its Health Visitor. Their places have been filled by Dr. Davies and Mrs. Wilson.

At Thetford an auxiliary Milk Depot met the needs of families unable to obtain milk through the ordinary channels. Those able to pay cost price did so. Necessitous cases received milk gratis. This was well organised, and when I visited Thetford to enquire into it, I suggested it would make a good nucleus for an Infant Welfare Centre. This has since been accomplished.

The work undertaken by the County Council hitherto is summarised under the headings of (1) Midwifery; (2) Health Visiting. A well-trained and experienced Nurse-midwife (Miss Fowler) is Inspector of Midwives, supervising the work of Midwives in the County, more or less under the County Medical Officer of Health.

Midwives report, under Rule 20 of the C.M.B. Rules, so that the County Medical Officer can determine in what cases prompt visits should be made and reports made to him. The work of the Midwives and Health Visitors would be enhanced by the formation of Health Centres in suitable areas. The work of the Health Visitors would also be rendered more efficient were they themselves, and the case reports of each individual child seen by them, systematically medically supervised. The Welfare Centres already in existence, and those about to be formed by voluntary effort, would also benefit by periodical visits from a medical practitioner (male or female) who has made a special study of Maternity and Child Welfare.

A great deal of propaganda work will be needed, and the encouragement of the formation of new centres. All these activities would occupy the whole time of such an assistant to the County Medical Officer—and as new centres are formed it would be desirable for this Medical Officer to become the Medical Officer at weekly sessions of as many of them as could be arranged without an undue tax upon the Medical Officer's time and energy. There is naturally considerable difficulty about appointing one of 3 or 4 doctors in practice in a given area to undertake the work, as apart from lack of special training in the social and medical services required, it is invidious to select one doctor practicing in a particular neighbourhood to interview the mothers and children who are

patients of the others—and the goodwill of the doctors and midwives is essential to secure the success of a Maternity and Child Welfare Centre. Sometimes the doctors may be agreeable to a rota, each attending in turn for 6 months, but experience shows this leads to irregularity and lack of uniformity as pointed out by departmental circulars.

Health Visitors should be Health Missionaries, improving the health and welfare of mothers and children in their districts, but their best endeavours will fail to secure the best results unless they are supplemented by medical knowledge, which can best be supplied at appropriate welfare centres, which should also be brought into intimate relationship with the work of the District Medical Officers of Health. All this work, effectively carried out through an assistant County Medical Officer of Health, acting as Maternity and Child Welfare Medical Officer, would be under the direct supervision of the County Medical Officer of Health, thus coming into conformity with all the public health administrative work in its relation as between District Councils and the County Council. Of course, the work will develop in value some years hence when the medical students of the future are more specially trained than at present in physiological and hygienic principles, special attention being given in the course of their training to the hygiene of pregnancy, child birth, infancy and early childhood, including the influence of environment. Then we may hope to approach the ideal, when each medical practitioner shall be a medical officer of health in the range of his own practice, and not merely as now a drug practitioner treating illnesses arising out of ignorance, which might have been prevented by adequate knowledge and health missionary effort.

Malaria.

This disease, common in the tropics, and not unknown in this part of England some years ago, depends for its transmission from one patient to another on the female 'Anopheles Maculipennis' Mosquito. This mosquito is to be found in several parts of Norfolk. I have been bitten myself by one in Norwich. Troops returning from the East who have had malaria may become a source of danger to the civilian population unless proved precautions are taken as regards their treatment and quarters, so as to prevent Anopholes mosquitos sucking their infected blood and then by biting uninfected individuals transmitting the disease. At the same time it is highly desirable that the breeding places of the Anopheles mosquito should be sought for, and, if possible, done away with. There were cases of malaria among troops quartered at Thetford and Costessey, and Lieut.-Colonel Copeman, M.D., F.R.S., enquired into the precautions being taken at these military camps.

Water Supplies and other matters of importance will be dealt with in my report for the year 1919.

REPORT of the County Medical Officer of Health for the year 1919-20.

SECTION I.

Natural and Social Conditions of the Administrative Area.

The Administrative County of Norfolk has an acreage of 1,303,570 acres, and a population at the census of 1911 of 321,733. It is chiefly an agricultural county, including the fruit growing districts in West Norfolk, but is bounded on the north and east by the sea. Many of the sea-coast towns and villages are largely populated by fisher-folk, while a few favoured resorts (Cromer, Sheringham, Hunstanton, etc.) derive considerable revenue from visitors in search of rest, change and recuperation, and seaside amenities. I have briefly stated the chief geological features in previous reports, some reference will be made to them in the abstracts from the district reports. Norwich and Great Yarmouth being County Boroughs, the largest town (and the only town of considerable size) in the Administrative County is King's Lynn. There are in all 32 Sanitary Districts in the Administrative County, including 2 Municipal Boroughs (King's Lynn, M.B., Population, 20,205 in 1911 and Thetford, M.B., Population, 4691); 10 Urban Districts, all under 6,000 population; and 20 Rural Districts. There are 3 Port Sanitary Authorities (King's Lynn, Wells-next-the-Sea, and Wisbech). In some of the Rural Districts are small towns of almost equal population with the smaller Urban Districts, such as Wymondham (Forehoe R.D.), Fakenham (Walsingham R.D.), and Harleston (Depwade R.D.). The Norwich Market Day (Saturday) brings in immense numbers of persons from the County area weekly; King's Lynn has two market days in the week, largely attended by West Norfolk and Isle of Ely people. Several of the smaller towns (East Dereham, Downham Market, Fakenham, Swaffham, Harleston, Cromer, Diss, Watton, Thetford, Wymondham, Attleborough, Stoke Ferry) also have market days once in the week. In King's Lynn M.B. there are 82 Factories and 224 Workshops registered. Ship-building has commenced at West Lynn and Railway Works exist at Melton Constable. Other districts have comparatively few factories, including Agricultural Engineering Works, Brush-making factories (Diss, Wymondham), breweries, etc. There are printing factories in Walsoken and Fakenham. A matter of social and (if a successful venture) of far reaching public health import in 1919 was the commencement of extensive works in the neighbourhood of King's Lynn by the English Oilfields, Limited. If successful, a considerable area, hitherto agricultural, will become industrial. At the village of Setchey provisional accommodation has been made for workers in purchased army huts. When I visited, arrangements were being made for a water supply for the colony from the Wisbech Water Works Co., and for a sewerage scheme comprising Septic Tank and Contact beds. Some ten years ago the agricultural labourers wage averaged, with extras, only about 16s. a week, and the Government Report on "Public Health and Social Conditions" showed that Norfolk had a higher percentage of population in receipt of poor relief than the average for England. The present wage is more in accordance with natural requirements, allowing for the increased cost of living, and the numbers seeking poor relief have greatly diminished. On the whole the County has prospered during the war, but the immediate prospect is not bright, and there are many unemployed, particularly in the towns.

STATISTICS.

Population.

Owing to the fact that it is nearly a full decade since the last Census, and to the disturbances of population on account of the great war, it is impossible to state with any accuracy the approximate population of any Sanitary District, and reliance has to be made on populations estimated by the Registrar-General, which differ for the birth rate and the death rate. The figures recorded have been obtained from the Registrar-General. They indicate as might be anticipated, a marked decrease in the estimated population of the Administrative County as compared with the Census of 1911. The next Census is due, and it will be of interest to know how approximate the estimated figures are.

The Infantile Mortality figure, or Mortality rate of infants under 1 year, as calculated per 1,000 children born in the year can, of course, be given, as the number of registered births and of registered deaths is known.

Vital Statistics.

Population of Administrative County of Norfolk (1) Census, 1911, 321,733; (2) Estimated 1919 (Registrar-General), 308,859 for birth rate, 296,494 for death rate.

Births, 1919: Registered (1) Legitimate, 4,838; (2) Illegitimate, 490; (3) Total, 5,328. Notified (within 36 hours of birth): (1) Live births, 3,938; (2) Still births, 64; (3) Total, 4,002. (a) By Midwives, 1,141; (b) by Doctors and Parents, 2,861. Birth-rate, 17.3.

Infant deaths, 1919: (1) Legitimate, 360; (2) Illegitimate, 59; (3) Total, 419. Infant Mortality rate (per 1,000 births, 1919): (1) Legitimate, 74.2; (2) Illegitimate, 120.44; (3) Total, 79.1.

Deaths at all ages. Urban Districts, 813. Rural Districts, 3,426. Total, 4,239. Death rate for 1919, per Registrar-General's figures, 14.3. Death rate for England and Wales, 13.7. If standardised for age and sex distribution Norfolk death rate, 11.46.

SECTION II.

Maternity and Child Welfare.

From a study of the Annual Reports of the Registrar-General, I find that, taking a series of years, the death rates of pregnant and parturient women are somewhat in excess in Norfolk, as compared with England and Wales as a whole, except in the years 1916 and 1917, when they were lower. This may be due in part (1) to the lack of a sufficient number of qualified midwives; (2) to the lack of special hospital provision for difficult cases in scattered and sparsely populated villages; (3) to the inadequacy of some cottages for even a normal confinement; (4) to deficient nutrition of pregnant women.

The indication is for the County Council to meet factors (1) (2) (3) by making arrangements with available hospitals or hostels for the reception of cases for which adequate provision at home is impossible, and to circularise midwives and practitioners of such provision and for which grant is available. Factor (4) is largely met now by the Administration of the Milk (Mothers and Children) Order, 1919. The fact that maternal mortality was lower in 1916 and 1917 (when income was better and rationing was in force, enabling all to get a share, even the labouring class) is suggestive that deficient nutrition is an important factor.

Infant Mortality is calculated on the number of deaths in a calendar year per 1,000 live births during the year. The following is the Infantile Mortality in round figures in the County of Norfolk for the past 6 years as recorded by the Registrar-General:—

Year	1914	1915	1916	1917	1918	1919
Infant Mortality	85	98	71	91	75	79

The corresponding figures for England and Wales were:—

Year	1914	1915	1916	1917	1918	1919
	105	112	91	96	97	89

The number of live-births and of infant deaths in the County area were for the same years:—

Year	1914	1915	1916	1917	1918	1919
Infant Births	6,582	6,202	6,115	4,888	4,654	5,328
Infant Deaths	561	608	433	444	396	477

The average infantile mortality for Norfolk for the eight years prior to 1914 was 87. For the five years, 1914 to 1918 inclusive, it was 83, The figures are for the Registration area, which do not quite coincide with those for the Administrative area—but are near enough for comparison and consideration. I do not propose to give the infant mortality rates for each year for each constituent urban and rural district, the infant population of each being too small for reliable deductions to be made therefrom. One year of small infantile mortality in any particular small urban or rural district may be followed (and often is) the next year by a high mortality figure without any special feature to account for it. If, however, an average is struck for a series of years a better idea of the relative infant mortality of each district may be formed. The figures for the five years, 1914 to 1918 inclusive, are arrived at by adding together for each district (1) all the live births, and (2) all the infants deaths for these five years and then calculating the average annual infantile mortality per 1,000 births during that period. Adopting this method the average annual infantile mortality for each constituent district in the County is as follows:—

AVERAGE NUMBER OF INFANT DEATHS PER 1,000 BIRTHS, 1914-1918.

RURAL DISTRICTS—			Average No. of Births.	Average No. of Deaths.	Deaths per 1,000 Births.
Aylsham	...	...	316	27	85.4
Blofield	...	...	199	15	75.3
Depwade	...	...	340	27	79.4
Docking	...	...	290	26	89.6
Downham	...	...	294	26	88.4
Erpingham	...	...	321	28	87.2
Flegg, E. & W.	...	...	214	21	98.1
Forehoe	...	...	207	15	72.4
Freebridge Lynn...	...	...	211	15	71.0
Henstead	...	...	190	16	84.2
King's Lynn (West)	...	...	19	1	52.6
Loddon & Clavering	...	...	236	18	76.2
Marshland	...	...	290	22	75.8
Mitford & Launditch	...	...	323	27	83.5
St. Faith's	...	...	186	15	80.6
Smallburgh	...	...	235	18	76.6
Swaffham	...	...	138	12	86.9
Thetford	...	...	175	17	97.1
Walsingham	...	...	292	21	71.9
Wayland	...	...	228	17	74.5
Total, Rural Districts ...			4704	384	81.6

Taking 75 infant deaths per 1,000 births as a reasonable figure in rural areas in these days of increasing knowledge and sanitation, there are only 5 Rural Districts which show an average infantile mortality below this figure, and one of them (West Lynn) had only 19 births in five years, so hardly counts. On the other hand, only one Rural District (Thetford) showed an average infantile mortality exceeding 90. Maternity and Child Welfare effort should (in the course of the next few years) reduce the average mortality of the 20 Rural Districts from 81.6 to 75; but this can only be done if such effort is concentrated and adequate, and is specially directed to the adequate nutrition of expectant and nursing mothers, and the encouragement of the breast feeding of infants for at least 7-10 months after birth.

URBAN DISTRICTS—			Average No. of Births.	Average No. of Deaths.	Deaths per 1,000 Births.
Cromer	...	...	61	5	81.9
Diss	...	...	65	5	76.9
Downham Market	...	...	45	5	111.1
East Dereham	...	...	97	9	92.7
Hunstanton, New	...	...	29	1	34.4
North Walsham	...	...	81	7	86.4
Sheringham	...	...	56	4	71.4
Swaffham	...	...	48	3	62.5
Walsoken	...	...	79	7	88.6
Wells	...	...	49	5	102.0
King's Lynn, M.B.	...	...	386	39	101.0
Thetford, M.B.	...	...	87	8	91.9
Total, Urban Districts ...			1083	98	90.4
Total, County			5787	482	83.2

Our Urban Districts in Norfolk, with the exception of King's Lynn, are such small towns that their average infant mortality should not differ very materially from Rural Districts—as is, indeed, the case. The average infantile mortality for five years for the 12 Urban Districts being 90.4. The towns showing a mortality in excess of this average are Downham Market, E. Dereham, Wells-next-the-Sea, King's Lynn (M.B.), and Thetford (M.B.) Special effort is, therefore, needed in these areas, and beginning has been made in most of them. All should have a well-organised M. and C. W. Centre.

The infant mortality figures for Norfolk for a series of years, when compared with those for England and Wales for the same years, though always lower, are less consistent. In any case they are too high for a rural area, seeing that the England and Wales figures include all the large towns with conditions which favour a high diarrhoea mortality in years favourable to fly-life and germ life.

I have shewn in previous reports that the chief cause of infantile mortality in Norfolk is prematurity (and immaturity) which indicate that special attention should be given to ante-natal conditions,, more particularly, perhaps, to the proper nutrition of pregnant women. In a special report on Infantile Mortality in Marshland, R.D., which I presented to the Public Health Committee in July, 1914, I noted that Oral Sepsis, associated with carious teeth and anæmia were very prevalent, and that these conditions were inimical to the nutrition of the unborn foetus. Efficient dentistry will, I am convinced, be a factor of great value in reducing the death rate from prematurity. A certain number of infant deaths are due to traditional fallacies which exist as to the feeding of infants. These should be reduced (and are being) by the Educational efforts of the trained Health Visitors; but in this direction much light is yet needed. It is only of quite recent years that we have learnt anything of what are known as vitamins. We know now that they exist (though they cannot be expressed in chemical terms), and their presence in food is of vital importance. The older method of expressing food value in calories (still quoted even in recent text books) must be superseded or amplified to bring more recent knowledge up-to-date. Public enlightenment is also needed on the deterioration in food value of many food stuffs by various trade processes. By some of these processes valuable mineral and organic constituents are removed, and the use of these foods, minus some of the natural elements, tends to engender disturbance of nutrition, which may lead on to more serious disease, or lessen resistance to microbic disease. Within the last few years we have learnt something of "deficiency" diseases, such

as beri-beri, rickets, etc., which are due to feeding on denatured articles, such as polished rice. In a very true sense, which, perhaps, has not occurred to some who have read the words, "all flesh is grass." Sheep, and bovines, and other herbivorous animals clearly construct their bodies out of grass (vegetable food); carnivorous animals construct their bodies out of the herbivorous animals which they eat. Grass (vegetable foods) is constructed out of the soil, and every farmer knows that if he does not supply his vegetables and grains with the right kind of soil food he will reap a stunted feeble crop, or suffer a crop failure.

If we take a handful of fertile earth and split it up in the laboratory, we find it composed chiefly of some sixteen elements. If we take a handful of grain (wheat, barley, oats, etc.) we find the same elements, plus at least two marvellous compounds elaborated by the plant, and known as "fat soluble A" and "water soluble B." The bodies of animals (including man) are made up of the same sixteen elements found in the soil and the plant, and for proper nutrition also require the new compounds—the vitamins—elaborated by the vegetable. The human body obtains them through the medium of food, but refining processes remove some of them altogether and others in large proportion. A diet of refined denatured foods will certainly lack necessary elements and will give rise to malnutrition and deficiency diseases. Hence the necessity for advocating the use of whole grains, finely ground, containing all their natural salts and vitamins: for the daily consumption of fruits, vegetables and greens—remembering not to discard the water in which the latter are cooked, but to utilise them again in the forms of soups and sauces: for the use of natural sugars in preference to refined sugars. Plant life has the power to organise the salts of the earth into forms which can be assimilated by animals, even those which appear in mere traces (such as fluorine and iodine), but which, in organic combination have essential functions to perform. The removal of one substance essential to a healthy life marks the beginning of disorder, and even were it possible to know the exact element missing it could not be supplied by medicine or other artificial means in the exact organic combination or quantity required. This quite apart from the obvious foolishness of removing natural products from food-stuffs and replacing them by less exact pharmaceutical preparations.

This little dissertation on food deficiencies is not out of place in discussing infantile mortality, for the welfare of both the mother and her infant are mainly dependent upon the proper nutrition of the mother by wholesome natural foods. Any deficiency, for instance, in calcium may cause the mother the loss of a tooth, for the baby unborn will make a demand upon its mother's tissues for bone-building calcium. When a baby is deprived of its necessary calcium (which can only reach it through its food) its bones are softened and its nerves undermined. The above sentences are, of course, merely illustrative. The subject is too big to be dealt with exhaustively in this place. The main object in view is to focus attention on this important question of health, without which an A1 nation cannot be reared.

In relation to Maternity and Child Welfare, we want

(1) Supervision of Midwives. This has been undertaken by the County Council for several years.

(2) Advice to Expectant Mothers. No organised arrangements for this exist beyond such advice as may be given by a doctor or midwife when an engagement is made for attendance at the subsequent confinement. It is almost impracticable to establish effective ante-natal clinics in sparsely populated rural areas, but our health visitors now make some ante-natal visits.

I have repeatedly drawn attention to decay of the teeth and septic mouths as one of the commonest departures from health in expectant mothers, which concerns not only her own health but affects also the proper nutrition of the growing foetus. This common defect is probably of greater national importance than even Tuberculosis or Cancer, and probably, like them, would to a large extent be prevented by the use of natural foods as referred to in preceding paragraphs, but existing conditions render efficient dentistry one of the most pressing needs in relation to Maternity and Child Welfare. It would, however, be impossible to provide dentistry for all women needing it. It will be a great thing if we are able to provide it for women who are at the time nursing or expectant mothers. For such provision Government grant would be available.

(3) Assistance at the Time of Confinement. The majority of births in Norfolk are attended by doctors. 1,141 out of 5,328 registered births in 1919, were attended by Midwives as such. In 560 other confinements they attended as maternity nurses. The Government now recognises for grant a scale of fees for doctors, according to the requirements, when a midwife sends for 'medical help.' The inadequacy of fees hitherto in force for midwives has also received attention. The prevention of Ophthalmia and Pemphigus in the newly born depends largely upon the immediate after care of the baby. Grant up to 50 per cent. will be available for hospital treatment provided, or contributed for, by the County Council for complicated cases of confinement, or complications arising after parturition, or for cases in which a woman to be confined suffers from illness or deformity, or for cases of women who, in the opinion of the Medical Officer of Health, cannot safely be confined in their homes, or such other provision for securing proper conditions for the confinement of necessitous women as may be approved by the Medical Officer of Health.

(4) Arrangements for Dealing with Post-Natal Matters. In 1919 the County Council employed three whole-time Health Visitors in addition to Miss Fowler (Inspector of Midwives and Supervising County Health Visitor). 62 midwives and nurses of the Norfolk Nursing Federation were also employed, where possible, as part-time health visitors at a fixed sum per child visited.

The three whole-time Health Visitors paid, during the year, 384 ante-natal visits to expectant mothers, 1053 first visits and 6,328 subsequent visits to infants under 1, and 7,601 total visits, including children 1-5.

The 62 nurses and midwives acting as Health Visitors (for the most part following up their own cases, but also visiting other cases when required), visited 884 infants under 1 and 673 over 1 year, paying 1,187 first visits and 8,433 total visits to children under 5. They also made 1,261 ante-natal visits to expectant mothers.

The combined figures show that 1,937 infants under 1 were followed up, out of 4,365 live births notified. There is, therefore, at present no staff available for following up even half the notified births, and it must be remembered that the notified births fall short of the registered births by 1,390. In other words, the percentage of notified to registered births was only 73.8, or roughly three out of four. Considerable areas in the County, amounting probably to nearly half its acreage, are without arrangements for following up births by Health Visitors or Nurses.

District Nurses are not easily obtained at the present time, as the Norfolk Nursing Federation, or any other nursing association can testify. To fill the existing gaps by District Nurses with a limited radius of activities, would require some scores of nurses. On the other hand, 3 more whole-time Health Visitors could cover most of the ground, and ensure that nearly all the notified births, at least, were followed up every 3 or 4 months. In these days of costly living their salaries need to be revised to an adequate scale.

Midwives Act.

Inspector of Midwives, Miss M. A. Fowler.

No. of Midwives practising, 103; trained, 84; untrained, 19. No. of Inspections to Midwives: Routine, 259; Special, 50.

Notifications received from Midwives: Still Births, 23 [12 full-time, (7 macerated, 2 monsters): 11 premature (5 macerated)]. Deaths before arrival of Doctor: Mother, 0; Child, 4. Laying out the Dead, 92. Source of Infection, 4. Artificial Feeding, 16 (4 illegitimate and 1 hare-lip). Medical Help Records, 168 (for mothers, 121, for child, 47). Mothers: Abortions, 18; A.P.H., 9; Obstructed Labor, 19; Prolonged Labor, 17; Retained Pl., 10; P.P.H., 2; Rptd. Perinm., 16; Rise of Temperature, 11 (3 Puerp. F., 1 died); Miscellaneous, 19 (ante-natal, 6, Puerperium, 13). Child: Dangerous feebleness, 11; Deformities, 5; Ophthalmia, 23 (1 died); B.B.A.—Still born, 1; Miscellaneous, 7.

Infant Welfare Centres.

(a) Urban—

(1) King's Lynn I.W.C. (Population, about 20,000); Address, Friends' Schoolroom, New Conduit Street; Sessions, Weekly; Day and hour, Thursdays, 2.30 to 4.30; Average attendance, Children 28; Clinic doctor, Dr. Ethel Baker-Burton attends weekly; Present arrangements for medical supervision include occasional visits by County Medical Officer of Health or by Borough Medical Officer of Health.

This was the first voluntary I.W.C. started in Norfolk (1916). [Average Infant Mortality in King's Lynn, 1914-1918, 101; 1919, 65.]

Extract from Report of King's Lynn Voluntary Infant Welfare Centre: "The mothers, who at first came from curiosity, now take a keen and intelligent interest in the advice and help they receive. The clothing branch has been a feature of the year's good work, between 90 and 100 knitted vests for infants have been sold to the mothers, most of them being knitted by a Ladies Working Party. Many other garments, mostly flannel, have been sold."

The Medical Officer of King's Lynn reports on the high standard of efficiency at the Centre, and I have only to repeat my own appreciation of the work done by a voluntary committee at this Centre, and I am sure the whole Committee will endorse my attributing this largely to the zeal and enterprise of Miss Pratt, the Hon. Secretary.

The County Council's Health Visitor, who was concerned materially in the inauguration and early work of this Centre, has been relieved by a Health Visitor (Nurse Giles), appointed by the Borough of King's Lynn. During 1920 the Centre has been re-organised under a new Committee more intimately connected with the Town Council.

(2) Swaffham I.W.C., Established, 1917. (Population 1911, 3,234; estimated, 1919, for deaths (R.G.), 2,783). Address, The Shirehall, Swaffham. Sessions, Monthly. Day and hour, Second Mondays at 3 p.m. (in the summer on fine days the meetings are held in some convenient garden). Average attendance, 12. Clinic doctor, The Medical Officer of Health (Dr. Davies).

The Clinic was established by the U.D.C. and a Maternity and Child Welfare Committee appointed. The U.D.C. has appointed a Health Visitor, who followed up 30 of the 46 births recorded in 1919. Milk is provided free or at less than cost price in necessitous cases under the Milk (Mothers and Children) Order. Each child is weighed regularly and a card record kept. No clothing branch provided, but voluntary lady workers entertain the mothers with tea, etc. The average annual infantile mortality is small, 62.5 (1914-1918). No infant deaths in 1919.

Thetford I.W.C., established, 1919. [Population, 1919, for deaths, 4,762. Average Infantile Mortality (1914-1918), 91.9; 1919, 86.] Address, Town Hall. Sessions, Fortnightly. Day and hour, Second Wednesdays, 3 p.m. Clinic doctor, The Medical Officer of Health (Dr. Oliver). Occasionally visited by County Medical Officer. Hon. Secretary, Miss C. Bidwell.

Children weighed fortnightly and examined by the doctor. Short lectures given after all children examined on a subject connected with infant rearing. Milk provided for necessitous cases and extra sugar sold when required. 58 children attended during 1919. Advice given to each mother personally, and cases requiring medical treatment referred to own doctor. The Medical Officer of Health reports, "The centre has been fully taken advantage of by the mothers in the town, and is undoubtedly doing good."

Walsoken. [Population (for deaths), 3,598. Average Infantile Mortality (1914-1918) 88.6; 1919, 96.] Shares benefits of Wisbech (Isle of Ely) I.W.C. A cottage with five rooms has been rented and equipped for the purposes of an I.W.C. Address, 6, Nelson Street, Wisbech. Hon. Secretary, Miss C. Jones. Sessions, Weekly. Day and hour, Fridays, 2.30 to 4 p.m. Clinic doctor, The Medical Officer of Health (Dr. H. Groom). Occasionally visited by County Medical Officer of Health.

This I.W.C. is well managed and very popular. The attendance is outgrowing the accommodation. The clothing department is a special feature. The Isle of Ely Health Visitor attends regularly. The babies are weighed weekly and examined by the doctor. Cases requiring medical treatment are referred to their own doctor. Quite a third of the attendances are Walsoken mothers and babies. The Norfolk County Council has allowed a grant of £10 to this centre on my advice.

North Walsham I.W.C. [Population (for deaths) 1919, 4,044. Average Infantile Mortality (1914-1918), 86.4; 1919, 80.] Address, Congregational Room, Vicarage Street. Sessions, Monthly. Day and hour, First Thursday, 2.30 to 4 p.m. Clinic doctor, The three town practitioners taking it in turn for 6 months each. The County Council Health Visitor attends each meeting.

The Medical Officer of Health writes, "Now that there is a resident Health Visitor, who also undertakes the duties of midwife, it is hoped that the centre will do good work and prove a help." The attendance is now improving.

(b) Rural—

Infant Welfare Centres in Rural areas form experimental work of an interesting nature.

Blofield I.W.C. Run on voluntary lines by the local branch of the Red Cross. Commandant, Mrs. Harker. The District Medical Officer of Health says, "This clinic is doing admirable work and its influence is felt over a considerable area of the District."

Average Annual Infantile Mortality for Blofield R.D. (1914-1918), 75.3 Address, Blofield Village. Sessions, Fortnightly. Day and hour, Thursdays, 2.30 to 4.30 p.m. Clinic doctor, Dr. Carruthers, F.R.C.S. Health Visitor, the Blofield District Nurse.

Because of the experimental nature of a rural I.W.C. which has proved a success, I shall give some details of its inauguration and working. In the summer of 1919, Mrs. Harker consulted me about the establishment of an Infant Welfare Centre at Blofield, one of her incentives being to utilise the activities of her Red Cross detachment of V.A.D., who had done excellent work during the war. I warmly welcomed the idea, and Mrs. Harker set to work, procured, erected renovated and equipped an army hut for the purposes of a baby welfare clinic—the object being to serve the village of Blofield and other villages within five square miles. The hut was ready in September, 1919, but prior to this, centre meetings were being successfully held in different rooms kindly lent for the purpose. I suggested to Mrs. Harker to write to Dr. Back, the District Medical Officer of Health, who immediately took a keen interest in the work. (Having retired from practice Dr. Back devotes his whole time to his public health duties.) At my request, Dr. Back furnished me with the following report in January, 1920, on the work undertaken in the Blofield R.D. in reply to specific questions:—

(a) Births registered in 1919, Legitimate, 162; Illegitimate, 14; Total, 176.

(b) 114 followed up by Health Visitors.

(d) The average attendance at the Blofield I.W.C. for the last 3 months, 14. This is the average in winter. On a fine day 24 mothers and 33 babies attended. The number on the books is increasing.

(e) The Doctor, the District Nurse (acting as Health Visitor), and four Red Cross V.A.D. Nurses attend each session. Advice is given to mothers as to the feeding, clothing, and general care of their infants. The doctor weighs and examines the infants, and where medical treatment is required advises the mothers to consult their own medical men. Infant clothing, feeding bottles of approved pattern, tooth brushes, and certain foods are sold at cost price.

(f) Voluntary assistance is given by Red Cross V.A.D. Nurses, acting under their Commandant (Mrs. Harker). The Clinic is, in fact, conducted on Red Cross lines, the V.A.D. nurses being told off to certain sections of work at each session.

(g) Since the beginning of December, 1919, seven infants, the children of necessitous parents, have been provided with milk free of cost. It is proposed to increase the number to whom milk is supplied at less than cost price.

(h) Infant clothing at the Blofield clinic is made principally by the V.A.D. members and sold at the cost of the material. This department of the work of the centre is much appreciated and has resulted in a very large numbers of infants and young children in the district being clad in hygienic clothing.

Dr. Back adds, "Doubts have often been expressed as to whether Infant Welfare Clinics could be carried on with advantage in a rural district. The undoubted success of the Blofield Clinic will go far to show that under efficient management, they can be of great value both directly to those attending them and indirectly through their educational influence.

MATERNITY AND CHILD WELFARE IN RURAL DISTRICTS, 1919.
(Abstracted from Reports of District Medical Officer of Health).

RURAL DISTRICTS—			NOTIFICATIONS.		
	Activities.		Puerperal Fever.	Poliomyelitis.	Ophthalmia Neonat.
Aylsham	...	Only preliminary work	0	0	1 (Recovery)
Blofield	...	M. & C.W. Committee formed; works in co- operation with the C.C	0	0	2 (1 Recovery) (1 Death)
Depwade	...	A few weighing centres	0	1	0
Downham	...		0	0	0
Docking	...	Subscriptions to District Nursing Associations undertaking M. & C.W. work, under County Scheme	0	0	1
Flegg, East and West	...	Arrangement with Flegg Nursing Association	1	0	0
Erpingham	...	Subsidising of 4 Midwives suggested	0	0	2
Forehoe	...	Health Visiting. Milk (M. & C.) Order	0	0	0
Henstead	...		0	0	0
Loddon and Clavering	...	A few weighing centres	1	0	1
Lynn, West	...		—	—	—
Lynn, Freebridge	...		—	—	—
Marshland	...		—	—	—
Mitford and Launditch	...		—	—	—
Smallburgh	...	Milk (M. & C.) Order	0	1	2
Swaffham	...		0	0	0
Thetford	...		2	—	2
Walsingham	...	Preliminary work	0	1	0
Wayland	...		1	—	4 (all recovered)

URBAN DISTRICTS—

Cromer	...	I.W.C started; average attendance 8	—	—	1
East Dereham	...		1	—	—
Downham Market	...	District Nurse	—	—	—
Diss	...	District Nurse. Weighing Centre	—	—	2
Hunstanton, New	...	District Nurse	—	—	—
Sheringham	...	District Nurse	—	—	—
Swaffham	...	I.W.C. H.V.; average attendance 12	—	—	—
North Walsham	...	Mothers' and Babies' Club	—	—	—
Walsoken	...	Shares Wisbech I.W.C	—	—	—
Wells-next-the-Sea	...		—	—	—

BOROUGHES.

King's Lynn	...	I.W.C.	—	—	5
Thetford	...	I.W.C.	—	—	—

Training of Nurse Midwives.

In 1916 the Education Committee agreed to pay for the midwifery and nursing training of 12 approved candidates at Plaistow each year. Approximate annual cost, £600.

Nursing Associations.

The Public Health Committee allows grants in aid of the formation of new Associations and in support of existing Associations. The Norfolk Nursing Federation has some 60 Associations in affiliation. The County Inspector of Midwives is Superintendent, and the Federation has provided an Assistant Suerintendent. At the beginning of 1919, 449 parishes were without district nursing associations. The grants in aid assisted in the formation of four new associations in 1918 and of an additional nine during 1919.

Food Supplies for Nursing and Expectant Mothers, and Milk for Infants. Milk (Mothers and Children Order) 1918.

In June, 1919, a letter was addressed to District Councils by authority of the County Public Health Committee, drawing attention to the means available for the provision of extra necessary nutriment under the above Order, and suggesting a basis of combination between the County Council and the District Councils for complying with the Order.

Action in connection with the above resulted in a considerable number of nursing mothers, expectant mothers and infants being supplied with extra nourishment.

The Milk (Mothers and Children) Order, 1919, dated December 22nd, 1919, made by the Food Controller, came into force at the end of 1919, in conjunction with the Local Authorities Milk (Mothers and Children) Order, 1919, dated December 22nd, 1919, made by the Minister of Health. These revoked the 1918 Order and re-enacted them with the following modifications:—

- (1) The Order relates to milk only.
- (2) Certain powers of the L.G.B. omitted.
- (3) Local Authorities empowered to supply milk free, or at less than cost price, not merely in necessitous cases, but also where such supply is necessary because of the retail price of milk.
- (4) The quantity of milk to be supplied is prescribed by the new Order.

In an accompanying circular the Ministry of Health pointed out that Government grant is limited to the cost of any food, including milk, distributed to necessitous cases who are certified by the M.O. of a centre or by the M.O.H. to be in need of the milk.

The quantity of milk to be supplied shall not exceed the amounts specified in the following scale:—

For children under 18 months— $1\frac{1}{2}$ pints daily.

For children between 18 months and five years—1 pint daily.

For nursing and expectant mothers—the quantity prescribed by the person certifying.

Action arising out of the new Order will be detailed in my next Annual Report.

SECTION III.

Sanitary Circumstances of the Area.

WATER SUPPLY.

At the present time a compendious work on the underground water supplies of Norfolk, by Mr. W. Whitaker, F.R.S., is in the press, and will shortly be published. By the kind courtesy of Mr. Whitaker I have been privileged to see the proofs. The work is an important contribution to the subject of the water supply of the County. Mr. Whitaker notes that it is perhaps strange that use is not made of more of the many springs of the County, care being taken to safeguard them from pollution.

(a) Springs.

Parts of the villages of Sandringham, West Newton and Wolferton are supplied by the King

1. By a spring from chalk in the parish of Flitcham.

2. By a spring from carstone and sand at Dersingham. The quantity being ample and the quality good.

Another ample spring of good quality in Castle Rising supplies part of North Wootton.

The town of Hunstanton is supplied from springs at Old Hunstanton where the greensands overlie the chalk about 30 feet above O.D. The springs are copious and constant, though I was told in 1909 that a diminution or excess in the supply was noticeable in 3 weeks in times of drought or excessive rain. The inference is that the supply is not entirely from chalk, but is partially derived from the greensands, the outcrop of which is at Heacham, about 3 miles westward. This inference is supported by the action of the water on lead pipes—hence lead pipes are not used. Occasional chemical analyses show a water of exceptional organic purity. Hardness, total, 15.9 per cent. ; permanent, 4.7 per cent. The supply is ample, and meets the needs not only of Hunstanton, but of Heacham in the Docking Rural District.

The Wisbech Water Works Company utilises powerful springs at Marham, the daily average yield being 734,000 gallons. En route to the towns of Wisbech and March, it supplies in Norfolk a considerable part of the town of Walsoken, which adjoins Wisbech; the town of Downham Market in the parts adjoining the mains of the Wisbech Water Works Company; certain villages along the line of route in the Downham Rural District, including the parishes of Marham, Wormegay, Tottenhill, St. Germans, St. Peters, St. Mary Magdalen, Stow Bardolph, Wimbotsham, Downham West, Bexwell and Fincham. In 1919, negotiations were in progress to supply the village of Crimplesham, to extend the main a short distance from Barroway Drove down Lady Drove. The Water Works Company has also been approached as to extending the main from Downham to Southery, which would also include the villages of Denver, Fordham and Hilgay. Thence it would be easy to extend to Ten Mile Bank.

Although the Wisbech Water Works Company's mains pass through the Rural District of Marshland, apparently no arrangement has yet been come to for supplying many villages near or through which the mains pass. The District Medical Officer of Health reports (1919): "a large part of the district, namely Terrington St. Clement, Tilney All Saints, Walpole St. Andrew and Clenchwarton, depend upon the storage of rain-water and shallow wells . . . generally speaking the cottage cisterns are not large enough to allow of an adequate supply." He refers to the construction of wells, as already outlined in my Annual Report for 1908 (p. 21), and encourages the sinking of such wells, as "the Marham water idea is not likely to materialise." When a pure and abundant supply is available, originating in the County of Norfolk itself, and obtained from the powerful springs at Marham, which (from their yield) constitute a supply which is notable among the spring supplies of England, it seems an outrage on common sense not to materialise negotiations for the supply of Norfolk villages en route, when two towns in another county reap the advantage of this natural pure water.

The village of Kelling in the Erpingham R.D., derives its supply from a spring in the neighbouring hills.

The water supply of Sheringham is partly derived from springs, which is collected in open channels, filtered through gravel and stored in reservoirs.

(b) Wells.

The principal source of supply in the greater part of the Administrative County of Norfolk, is by many small well-supplies. The largest public well-supply is that of King's Lynn from deep wells at Gayton, which also supply parts of the parishes of Gaywood, Leziate and Mintlyn, in the Freebridge Lynn R.D.

Other deep well supplies have been tapped for Cromer, East Dereham, Diss, Sheringham, Swaffham, Thetford and North Walsham.

The Cromer and Melton Water Works also supply parts of Felbrigg, Northrepps, Overstrand, Roughton, Runton and Sidestrand.

In addition, there exist several deep well supplies for private owners, factories, etc.

The following extracts are from the Annual Reports of District Medical Officers of Health for the year 1919:

URBAN DISTRICTS.

Thetford M.B. Sample submitted for chemical and bacteriological analysis—satisfactory. No new houses connected with mains. Five private wells in the town supply 10 houses.

East Dereham. Town supply constant, sufficient, excellent. A full report on the well and analysis of the water given in 1914 Report. The hamlets derive their supply from shallow wells in the boulder clay.

Downham Market. The larger part of the town supplied by the Wisbech Water Works Company. Supply constant and excellent. This water was laid on to 6 additional houses. The rest of the town supplied by wells—water of doubtful quality.

Diss. Excellent water supply from the water works. Daily consumption more than double that of 1913. 573 premises supplied from main. 325 not supplied.

New Hunstanton. Supply ample, constant, excellent, from springs at Old Hunstanton.

Sheringham. Supplied by the Sheringham Gas and Water Company from springs and deep tube wells in the chalk in a protected area in Sheringham Woods.

The attention of the Company has been drawn to two defects in collection and distribution. The method of collection in channels leads to abundant growth of low forms of animal and vegetable life, which appear as a sediment in the water pipes—the channels and springs should be covered, and an efficient system of filtration adopted. A new high level reservoir is needed to supply houses in the high lying parts of the town.

Swaffham. Quality good, and supply efficient, from well 180 feet deep. It is unfortunate for sanitary purposes that the supply should have to be cut off during some hours of the night." [The dry autumn of 1920 has diminished the supply somewhat seriously.]

North Walsham. Supply from the Council's deep well good and plentiful. The mains do not extend to White Horse Common, where the water supply is bad. The town supply should be taken there as soon as possible.

Walsoken. Supply good (Wisbech Water Works Company). An increasing quantity is used in the district.

RURAL DISTRICTS.

Aylsham. No public supply, private wells. The shallow surface water wells are in constant danger of pollution from sunk privy bins, slop holes and refuse heaps, which should be removed from the neighbourhood of wells.

Blofield. Thorpe St. Andrew, to an increasing extent, supplied from the Norwich mains. Rest of district by wells. In the low lying villages the shallow well water often contains a large amount of organic matter. Some of the wells still uncovered. 3 wells at Halvergate, on analysis, gave evidence of sewage pollution and were closed. Fortunately there are other wells from which water beyond suspicion can be obtained.

Depwade. No public supply. In Harleston the large houses and factories obtain good water from deep wells. Two wells have been constructed at Alburgh towards alleviating the difficulties there.

Docking. Old Hunstanton and Heacham now supplied from the New Hunstanton U.D. Waterworks. The rest of the district depends on wells—not so good in the low lying villages. Supply mostly ample, but distribution defective, especially at Docking, where a further supply is in contemplation.

The wells are mostly draw-wells—very few properly constructed, or protected, or situated. Improvements have been effected in many wells.

Downham R.D. A large part of the district now supplied from the mains of the Wisbech Water Works Company, which is sufficient to supply the greater part—negotiations in progress for Crimplesham. Other parts of district depend upon shallow wells and tanks.

A special report on the water supply of Southery showed existing supply from surface wells and rain water stored in tanks—in a few cases from the River Ouse.

In 1911, 108 (out of 286) homes had no supply on the premises, but 57 of them were provided after service of notices. Another 20 were supplied from the parish pump at Little London. A sample from the well (at Flint Home), considered the best in the village, when analysed was reported as grossly polluted and unfit for drinking purposes. The analysis revealed high Chlorine and Nitrogen figures. The figures of analysis are given in the report. The Wisbech Water Works Company were approached with a view of extending the mains from Downham to Southery (6-7 miles), which would also include Denver, Fordham and Hilgay. The Water Works Company stated they were unable to undertake the work.

Erpingham. *Deep wells.* Mundesley and Holt have their own deep wells in chalk. Overstrand, Sidestrand, Felbrigg, East and West Runton, and part of Roughton, from the Cromer well.

Shallow wells. Nearly every other village receives water from shallow wells in the glacial drift.

Springs. Kelling.

E. and W. Flegg R.D. Caister-on-Sea, Ormesby St. Margaret and Ormesby St. Michael, chiefly supplied by the Great Yarmouth Water Works Company. Sixteen new services laid on during the year.

Other parishes supplied by wells. Seven wells have been closed.

Forehoe R.D. Mainly from shallow wells, badly constructed, and liable to contamination. The condition of the water supply at Wymondham has been repeatedly reported upon, and was recently enquired into by Dr. Monckton Copeman (of the Ministry of Health). "Until we get an ample supply of pure water (and it can be easily had) the condition of the town can only be unsatisfactory."

Henstead R.D. From deep and surface wells. A polluted well at Bramerton will have to be closed.

Loddon and Clavering R.D. From wells and ponds—abundant.

Marshland R.D. A large part of the district depends upon stored rain water and shallow wells. The cisterns for rain water not large enough. Proper construction of wells advocated.

Mitford and Launditch R.D. Entirely from local wells, generally shallow, the boulder clay being used as catching ground. Great care has to be taken to prevent fouling by leaking cess-pools, etc. Usual chlorine content is 4.5 grains. "No trouble has arisen from the water supply for many years, the quantity being sufficient and the quality, after allowing for local conditions, quite satisfactory."

St. Faiths R.D. Two samples analysed. The well at Weston deepened and water improved. The well at St. Faiths contaminated and so far not satisfactorily dealt with.

Smallburgh R.D. Water plentiful from wells averaging 25 feet in depth, and generally good. Contamination in some cases from carelessness of occupiers.

Swaffham R.D. Entirely from wells, most shallow. Quality generally good. 3 wells cleaned and repaired. 3 closed.

Thetford R.D. Wells mostly surface wells, liable to pollution. The condition of many has been improved by raising the well mouth, puddling outside with clay, and rendering inside with cement. Many more require attention.

Walsingham R.D. Melton Constable supplied from an artesian well. Rest of district by surface wells, many defective in structure and liable to pollution. 27 samples analysed, 18 satisfactory, 9 contaminated. No definite steps have yet been taken with regard to the water supply of Fakenham.

Wayland R.D. Entirely from wells, mostly shallow. On the whole the quality is fairly good.

Drainage and Sewerage.

URBAN DISTRICTS.

Cromer. No reference in report of Medical Officer of Health. Is generally satisfactory.

East Dereham. A complete system, with sewage works of Dibden Slate beds and filters, with rotary distributors. Generally satisfactory.

Diss. The Medical Officer of Health notes that a main drain up Frenze Road will have to be laid to connect the Council's new housing scheme there. In 1919, 4 new drains connected to sewers, 11 reconstructed, 26 new w.c.s on 22 premises serving 31 houses. 28 fixed privies converted to movable receptacles, 24 to w.c.s, 2 to hand-flushed w.c.s. The number of fixed receptacles is not known, but since 1914, 34 have been replaced by removable receptacles, 104 by fresh water w.c.s, and 9 by waste water w.c.s.

Downham Market. The sewerage plant is working smoothly. 464 w.c.s are connected with the sewers. 14 w.c.s are not connected (no sewers available) and there are still 14 earth closets and a number of vaults.

Hunstanton, New. Separate storm water sewer. The sewage is conveyed to settlement tanks, the liquids passing through an outfall into the sea. The outfall is shortly to be extended 50 yards further. The settlement tanks need attention.

Sheringham. Satisfactory modern sewers. Outfall below ordinary low water.

Swaffham. Sewage carried to a sewage farm 2 miles from the town. There are, however, only 265 w.c.s connected with the sewers—there still being 510 pail closets, 6 large privy vaults and 168 small privy vaults.

North Walsham. Unsatisfactory. Surface channels for liquids often with insufficient fall and consequent nuisance. In many parts no facilities for disposing of liquids. A drainage scheme has been adopted by the U.D.C. recently elected.

Wells-next-the-Sea. Sewers in several places defective, require relaying and replacing. Inadequate accommodation in many yards for providing each dwelling with a separate privy.

Walsoken. On the whole satisfactory.

MUNICIPAL BOROUGHES.

King's Lynn. No reference in annual report.

Thetford. Partly served with w.c.s, otherwise pail closets and privy vaults.

RURAL DISTRICTS.

Generally speaking Rural Districts naturally have no expensive sewage schemes or systems. A few of the larger towns and villages, including some of those at the seaside, which receive visitors, have some system of sewerage, such as Fakenham and Melton Constable in the Walsingham R.D.; Holt, Mundesley, West Runton, Overstrand, and the nine urban portions of Sidestrand and East Runton in the Erpingham R.D.; Attleborough and Watton in the Wayland R.D.. At Fakenham all houses are connected up with the sewers, though there are not many water closets in the town, and the sewage is subjected to land filtration at a sewage farm, which appears to be a success. At Melton Constable the erection of new houses will probably require an extension of the filter beds. At Watton, and one of the Attleborough sewers, the septic tank system is adopted. At the seaside villages the sewage is conveyed to the sea.

In many of the towns and larger villages in all the rural districts, a sort of sewerage scheme has evolved as described by Dr. Back, Medical Officer of Health for Aylsham R.D. and Blofield R.D. Householders utilising road water gulleys and drains for slop waters, the water courses into which they lead become offensive, and the District Council, to meet complaints, lays a certain length of sewer to pipe the foul fluid further away. Untrapped gullies are replaced by properly trapped gullies, and ventilating shafts are erected. These measures constitute what are called town drains, which remove the offence further away from the inhabited areas, and though

thus far there is an improvement, as Dr. Roydon, Medical Officer of Health Flegg, remarks, "this method of drainage is far from satisfactory." Dr. Lack, Medical Officer of Health, Forehoe, again directs attention to the unsatisfactory drainage arrangements of Wymondham and Hingham and Dr. Wright (Smallburgh R.D.) to that of Stalham. The Thorpe St. Andrew (Blofield R.D.) sewage scheme, sanctioned by the L.G.B. before the onset of war, is still in abeyance because of abnormal conditions.

Closet Accommodation, 1919.

MUNICIPAL BOROUGHES.

King's Lynn. No figures given. Generally provided with w.c.s.

Thetford. No figures given, has w.c.s, pail closets and privy vaults.

During 1919 one vault converted to a w.c. and 9 vaults to p.c.

URBAN DISTRICTS.

Cromer. No figures given, generally provided with w.c.s.

East Dereham. 700 w.c.s, 778 pail closets, 81 privies. 46 vaults were converted to pail or water closets, and 6 new pail closets built.

Diss. 223 w.c.s, 29 of which are waste water w.c.s. 54 privies with moveable receptacles. Number of fixed receptacles not known.

Downham Market. 464 w.c.s connected with sewers, 14 not connected. 14 earth closets. Still some privy vaults.

Hunstanton, New. W.c.s—satisfactory.

Sheringham. W.c.s, with about 30 pail closets, which will be converted.

Swaffham. 265 w.c.s, 510 pail closets, 61 box closets, 174 vaults.

North Walsham. No figures.

Wells. Practically all pail closets. Inadequate arrangements.

Walsoken. W.c.s and pail closets, no figures.

RURAL DISTRICTS.

Aylsham. The bin system is being superseded by the pail system. Still many privies shared by more than one family.

Blofield. Ditto. Large houses have w.c.s discharging into cesspools.

Depwade. 938 pail closets, 292 w.c.s, 2074 middens.

Downham. No figures. 3 privies converted into w.c.s. 13 new privies.

Docking. Generally privy cesspits and pail or box closets, larger houses have w.c.s.

Flegg, E. and W. 2,487 earth closets, 92 w.c.s.

Erpingham. Pail closets about 50 per cent. (see Drainage and Sewerage.)

Forehoe. No figures (see Drainage and Sewerage).

Henstead. Evenly divided between pail system and privy system, large houses w.c.s.

Loddon and Clavering. Chiefly pail closets.

West Lynn. No figures.

Freebridge Lynn. No figures. 10 new closet pails provided.

Marshland. No figures.

St. Faiths. No figures.

Smallburgh. Privies and earth closets. Very few w.c.s. All new cottages have e.c.s.

Swaffham. Mostly privies, but gradually converting to pail system.

Thetford. Privy system nearly universal.

Walsingham. Pail system chiefly.

Wayland. Mostly privies. The pail system being gradually substituted for privies where possible.

Scavenging and Refuse Disposal.

Among Urban Districts, King's Lynn, Hunstanton and Cromer have house refuse removed in covered carts to a dust destructor: Diss, Thetford, Sheringham and Swaffham have weekly collections—the refuse of Sheringham being tipped in an isolated spot and immediately covered with soil—that of Thetford is trenched; paper being burnt. Scavenging at Diss is done by contract.

Among Rural Districts, public scavenging by Councils own employees, or by a contractor is carried out at the following villages or towns in the sanitary districts enumerated.

Aylsham R.D. Hackford and Aylsham.
 Blofield R.D. Thorpe St. Andrew, Reedham, and Blofield.
 Docking R.D. Ringstead, Burnham Market, Docking and Heacham.
 Downham R.D. Fincham, Downham West, and Hilgay.
 Erpingham R.D. Holt, Mundesley, Overstrand, Cley, Sidestrand, East Runton, West Runton.
 Forehoe R.D. Wymondham.
 Flegg R.D. In some of the larger parishes (not named).
 Loddon and Clavering R.D. Loddon.
 West Lynn R.D. West Lynn.
 Freebridge Lynn R.D. Gaywood, Castle Acre, and Great Massingham.
 St. Faith's R.D. Lenwade.
 Mitford and Launditch R.D. Litcham and Lyng (Shipdham to follow).
 Walsingham R.D. Fakenham, Walsingham, Stiffkey, Blakeney, Hempton, Melton Constable and Great Ryburgh.

At Stalham (Smallburgh R.D.) still a problem. Nothing done yet at East Harling Feltwell and Methwold (Thetford R.D.). In Depwade R.D. scavenging is advocated for Harleston, and in Aylsham R.D. for Foulsham, Coltishall and Cawston.

In the greater part of the rural areas occupiers have to perform their own scavenging, disposing of the refuse by burial in their small gardens. This, of course, often results in the surreptitious disposal of much refuse in any neighbouring watercourse, or ditch, or field. If the willing co-operation of individuals is necessary for the successful working of any system, it is doubly essential when they are their own scavengers, and every facility should be provided. Generally, Councils and tenants are showing an increased tendency to persuade or compel landlords to provide moveable covered dust bins and pail closets.

Housing.

I do not propose to give the usual tabular statement which I published before the war, as 17 Medical Officers of Health have failed to supply the figures necessary for their districts.

Inspections.

Rural Districts. The number of houses inspected in the course of 1919 are stated as follows: Aylsham R.D., 416; Erpingham, 75; East and West Flegg, 1,574; Loddon and Clavering, 1,347; West Lynn, 303; Mitford and Launditch 215; St. Faiths, 80; Swaffham, R.D., 400; Wayland, 150. The Medical Officer of Health of Blofield R.D. states inspection was in abeyance because of the heavy demands on the time of the Inspector of Nuisances, who was acting as executive officer in relation to food control.

Urban Districts. King's Lynn M.B., 4,943; Cromer, 78; E. Dereham, 875; Diss, 150; Wells-next-the-Sea, 180.

Houses Reported Unfit. Rural Districts. Aylsham, 15; Depwade, 1; Docking, 14; East and West Flegg, 12; Swaffham, 50; Walsingham, 467; Wayland, 43.

Urban Districts. Diss, 10.

Closing Orders. Aylsham, 2; Depwade, 4; Forehoe, 79 (10 withdrawn on being made fit); Freebridge Lynn, 4; Walsingham, 2; Wayland, 30.

Diss U.D., 17; Wells U.D., 12.

Housing Defects Remedied without Closing Order. Aylsham, 13 houses; Mitford and Launditch, 198.

Copies of representations and of closing orders are not always sent to the County Medical Officer of Health, as required by Section 69 (1) of the Housing Act, 1909. Abnormal conditions are taken into consideration, but attention must now be drawn to the duty of the clerk and Medical Officer of Health of District Councils to furnish information to Medical Officer of Health of County Council.

The post-war activities of the Government in relation to Housing Schemes materialised first in the Housing Act of 1919, which made it compulsory on local authorities to prepare housing schemes. Where local authorities fail, or are not prepared to fulfil their obligations, the County Council may be authorised to act in place of the local authority, in which event the County Medical Officer of Health will be instructed to inspect and report to the Ministry of Health as to the exercise of the power entrusted to the local authority. This, of course, can only be managed if a County Inspector is appointed. This has been done in some counties.

Housing Schemes, 1919.

RURAL DISTRICTS—

Aylsham. The scheme provides for the erection of 172 houses in 36 villages, the proportion being 16 houses for Aylsham, 12 for Coltishall, and 8 for Whitwell and Foulsham, 6 houses each for Colby, Marsham, Belaugh, Buxton, Hevingham, Reepham, Hackford, Cawston, Saxthorpe, 4 houses each for Burgh, Ingworth, Erpingham, Barningham Parva, Great Hautbois, Lamas, Oxnead, Scottow, Skeyton, Swanton Abbott, Kerdiston, Corpusty, Themelthorpe and Wood Dalling; 2 each for Brampton, Tuttington, Itteringham, Wickmere, Keydon, Salle, Oulton, Wood Norton and Guestwick.

Sites have been selected, but the scheme is spread over three years.

Blofield. It is contemplated to build 253 houses, of these 100 for Thorpe St. Andrew. The building of eight cottages has begun at Reedham. Generally, sites have been selected and contracts drawn.

Depwade. 10 cottages being erected at Harleston, and 8 at Brockdish. (Several cases of overcrowding unabated owing to shortage of houses.)

Docking. Shortage of houses estimated at 150. Many cases of overcrowding. 12 houses in course of erection, and 14 being repaired to make them habitable.

Downham. Proposals for 470 houses. Approximately 120 existing houses are not, and cannot, be made fit. Another 190 may be rendered fit by structural improvements.

Flegg, E. and W. Admitted shortage. 30 known cases of overcrowding, consequently unabated. On August 5th, 1919, District Council passed a resolution "with respect to the Housing Scheme that the matter be discussed in a year's time." The Housing Committee resigned, and no new Committee was appointed until December.

Erpingham. Scheme for 256 cottages in 46 villages: Holt, 20; Mundesley, 12; Runton, 12; Briston, 10; Cley, 10, etc. Sites and plan approved.

Forehoe. Tenders accepted for 36 houses. Fifty acres have been purchased, and on an average 5 houses will be erected to the acre. 250 houses in prospect.

Henstead R.D. New houses for working classes in course of erection in 1919 in following parishes: Cringleford, 1; Hethersett, 5; Keswick, 1; Ketteringham, 2; Hethel, 2; Great Melton, 1; Mulbarton, 2; Colney, 1; Total 15. The District Council purchased sites for houses in following parishes: Arminghall, 4; Bramerton, 4; East Carleton, 4; Mulbarton, 4; Shotesham All Saints, 4; Shotesham St. Mary, 4; Stoke Holy Cross, 8; Flordon, 4; Newton Flotman, 6; Poringland, 12.

Mitford and Launditch. Estimated shortage of houses, 120. As a preliminary measure land bought and plans prepared for 4 houses at Hardingham and 6 at Litcham.

Loddon and Clavering. "As elsewhere there is a scarcity of houses." Of existing houses many are unsatisfactory. No scheme mentioned.

West Lynn. The housing problem is very acute owing to an increased number of workmen in the district (recent development of shipbuilding). A scheme was submitted to the Ministry of Health. [On making enquiry, I am informed that the Government refused assistance on the grounds that the demand arose out of a private concern (shipbuilding).]

Freebridge Lynn. 46 houses to be erected in 9 parishes. Under new Act the Council has decided to make habitable 11 existing cottages in Ashwicken where the owner refused to comply with notices served.

St. Faiths. Estimated shortage, 112. 26 sites approved. Erection of cottages commenced at Horsford, and Felthorpe. 2 wooden cottages erected at Catton and Sprowston.

Marshland. 6 new houses erected in 1919. More needed.

Smallburgh. Estimated shortage, 250. 8 new cottages begun in 1919. The Council intend doing repairs in existing unfit houses in suitable areas.

Swaffham R.D. Council decided to build 70. Contracts signed for 3 bedroom cottages, 8 at Sporle, 6 at Beechamwell.

Thetford R.D. Scheme provides for 116 houses in Eastern Sub-District, and 56 in the Western Sub-District. It was decided to proceed immediately with the erection of 60 cottages. Estimated needs: East Harling, 50; Garboldisham, 12; North Lopham, 12; South Lopham, 16; Bridgham, 10; Blo Norton, 16; Feltwell, 20; Hockwold cum Wilton, 10; Methwold, 14; Northwold, 12. Total, 172.

Walsingham. 367 houses required in 37 parishes. Work in progress, Fakenham 12, Sculthorpe 4, Ryburgh 6, Wiveton 6, Hempton 8.

Wayland. Two new houses built, 2 reconstructed. Council have decided to erect 12 at Attleborough, 4 at Watton, 4 at Kenninghall. Houses also required at Banham, New Buckenham, Carbrooke.

URBAN DISTRICTS—

King's Lynn, M.B. Approved Housing Schemes provide for 300 houses. "Houses are very seriously wanted."

Thetford, M.B. Nine acres of land purchased for 75 new cottages.

Cromer, U.D. A Scheme for 16 houses.

E. Dereham, U.D. An estimated shortage of about 50 houses. Land purchased and plans approved for 10 houses.

Downham Market, U.D. Scheme for 24 new houses. Site acquired and lay out plans for 6 houses approved.

Diss. Two plots of land bought for 48 houses.

Swaffham. "A shortage of suitable houses. Scheme for 10 houses approved.

North Walsham. "A great shortage." Scheme adopted for 52 houses.

Wells. Two schemes. 8 houses erected during 1919. Plans for 24 others approved.

Walsoken. Council endeavouring to provide new houses. [A scheme has been submitted to the Ministry of Health.]

From a Report recently issued by the Ministry of Health, I learn that up to the 31st July, 1920, 343 schemes had been submitted to the Ministry by 29 of the 32 constituent sanitary districts in the Administrative County of Norfolk. The 3 Districts which had not submitted any scheme were Sheringham U.D.C., New Hunstanton U.D.C., and West Lynn R.D.

Total area of sites submitted	1162.8 acres.
" " approved	88.67 "
Number of Lay outs submitted	142
" " approved	139
No. of Houses in House Plans submitted	1553
" " approved	1519
No. Houses in Tenders submitted	1201
" " approved	1199

As a sample of the care and energy exercised by some District Councils in the preparation of housing schemes, I quote in full from the report of the Medical Officer of Health for the Walsingham R.D. (Dr. W. H. Fisher).

"Four Sub-Committees were appointed to report on the General Housing of the District, and I append a resume of their work.

"The district was divided into 4 groups and the Committee divided into four sub-Committees, each sub-Committee to make enquiries and report on the particular group allotted to it. Out of the 55 parishes in the district a total of 367 new houses were required in 37 of the parishes, the number being 50 for Melton Constable, 30 each for Fakenham and Hempton, 22 for Stiffkey, 12 each for Binham, Gunthorpe, Hindringham, West Raynham, Sculthorpe and Little Walsingham, 10 each for Sharrington and Wighton, 8 each for East Barsham, and Great Ryburgh, 7 for Bale, 6 each for Briningham, Brinton, Helhoughton, Kettlestone, Great Snoring, Little Snoring, Stibbard, Thursford, Wareham, Wiveton and Great Walsingham, 4 each for Barney, Morston, East Raynham, South Raynham and Tattersett, and 2 each for Alethorpe, West Barsham, Field Dalling, Pensthorpe and Shereford. There were about 120 cottages in the district recommended for demolition, of which 13 were in Hempton, 10 in Stiffkey, and 8 each at Stibbard, New Walsingham and West Raynham. There were also a large number of houses recommended for reconstruction and repairs, and converting two into one. It was recommended that suitable sites be applied for in the various parishes in which new houses were required. It was recommended that the County Council be approached to reconstruct police cottages at New Walsingham. In that parish it was pointed out that there were obstructive buildings and overcrowding, and it was recommended that derelict premises should be demolished to afford air space. A comment was made with respect to West Raynham: "The cottages on the School Hill appear, without exception, to be in disrepair. Inspections were made in two blocks, and revealed in one case a cottage without kitchen or room upstairs; in another a small cupboard of 600 cubic feet was occupied by three girls. A group of some six or eight cottages are built back-to-back, and have, therefore, no through ventilation. The drainage in this part of the parish is very bad." The recommendations in this parish were the demolition of all the back-to-back cottages, and the closure for reconstruction of the remaining houses on School Hill, and that 12 new cottages be built. With respect to Tattersett it was recommended that a row of six houses which had apparently been erected in 1693, in which very poor accommodation was provided, should be closed for reconstruction or demolition. The report with reference to Hempton was: "With few exceptions the cottages in this parish are in disrepair to a ruinous degree, little or no gardens are provided, and gross overcrowding 'on area' prevails. Defects and insanitary conditions were found in such abundance as to defy description." Here, in addition to the thirteen houses recommended to be demolished, 8 were recommended for reconstruction and 30 new houses built. The sub-Committee for the group of parishes which included Hempton, reported that from external observations in that area, less than 30 per cent. of the cottages complied with modern standards as to three bedrooms, living rooms, and adequate gardens. A number of comments were also made with respect to many other parishes, in some of which the reports were

favourable. The parishes of Holkham, Quarles, and Egmere were not inspected, because it was well-known that cottages in those parishes were in a superior condition, and Lord Leicester had intimated his intention of building what further cottages were necessary. The Committee recommended that a start be made with the provision of houses in the following parishes, where they were most needed, viz.; Fakenham, 12 houses; Hempton, 8; and 4 each at Stiffkey, Blakeney, Great Ryburgh and Wiveton. To carry this suggestion into effect the Committee recommended that Mr. John Page be instructed to bring the already prepared by him for the houses at Fakenham up-to-date, to be submitted to the Council. That the Clerk be instructed to negotiate for the purchase of land at Hempton and other place where sites were required. In the selection of sites due consideration was to be given to the distance from the public elementary school.

“The report was adopted.

“A tabular statement of the Committee’s recommendations will be found in the Sanitary Inspector’s Report.

“Actual work is now in progress on the following houses in their respective schemes:—

Fakenham	...	...	...	12	Full number	...	...	22
Sculthorpe	...	...	...	4	„	„	...	12
Ryburgh	...	...	...	6	„	„	...	12
Wiveton	...	...	...	6	„	„	...	6
Hempton	...	...	...	8	„	„	...	32

“Negotiations are taking place for the acquisition of land in the parishes of Melton, Blakeney, and Stiffkey.

“When these building schemes are well in hand, it is important that immediate attention should be given to the number of houses recommended for reconstruction, and also to the necessary repairs to existing houses; with the large number of cottages in the villages owned by landlords who are unable with the present restrictions of rent to carry out necessary repairs, a percentage of them will soon be rendered uninhabitable; as the County Medical Officer of Health points out in his last quarterly report by Section 22 (1) of the Housing Act, 1919, if application is made by the owner of the house to the Local Authority within the meaning of Part III. of the Principal Act for assistance for the purpose of carrying out works which, in the opinion of the Local Authority, would render the building fit for habitation, and it is desirable that the work should be carried out, the Local Authority may lend to the owner the whole or any part of the cost up to one half the estimated value of the property mortgaged.

“No formal complaint has been received re unfit houses from householders or Parish Councils.

“Three cases of overcrowding were reported during the year. It is increasingly difficult to deal with these cases.”

Regional Housing Commissioner.

This officer of the Ministry of Health consulted me as County Medical Officer of Health as to returns made of additional housing for each district. He also held conferences with all the County Medical Officers in his area as directed by the Ministry. These conferences were valuable, and the relationship between the Commissioner and the County Medical Officers distinctly advantageous.

Small Holdings Act.

74 bungalows were erected in connection with Small Holdings during 1919 and 1920. In all 98 tenants were provided with housing accommodation, the additional provision being made by the division of large houses into tenements.

SECTION IV.

Infectious Diseases. Notifications, 1919.

Borough or Urban Districts.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Puerperal Fever.	Erysipelas.
Cromer	—	1	18	—	—	1
Diss	—	2	6	—	—	—
Downham Market ...	—	6	—	—	—	—
East Dereham	—	25	4	2	1	2
King's Lynn M.B. ...	—	404	6	6	—	2
New Hunstanton ...	—	2	3	1	—	1
North Walsham	—	1	62	—	—	3
Sheringham	—	5	1	3	—	1
Swaffham	—	2	2	—	—	—
Thetford M.B.	—	3	3	1	—	—
Walsoken	—	18	5	—	—	1
Wells	—	1	—	—	—	—
Rural Districts.						
Aylsham	—	18	23	—	1	6
Blofield	—	25	23	4	—	1
Depwade	—	6	30	—	—	3
Docking	—	17	9	1	—	4
Downham	—	18	6	—	—	5
Erpingham	—	24	25	6	—	1
East & West Flegg ...	—	1	34	—	1	—
Freebridge Lynn ...	—	57	2	1	—	1
Forehoe	—	7	34	—	—	—
Henstead	—	7	15	—	—	—
Loddon & Clavering	3	46	36	2	1	6
Marshland	—	64	9	—	—	4
Mitford & Launditch	—	21	20	1	—	6
St. Faiths	—	15	28	1	1	3
Smallburgh	—	6	35	1	—	3
Swaffham	—	17	1	—	—	1
Thetford	—	8	5	—	1	1
Walsingham	—	8	13	3	—	2
Wayland	—	6	4	2	1	4
West Lynn	—	55	—	—	—	—

Small Pox.

Three cases of a mild and unusual type occurred in the Loddon and Clavering Rural District. These were part of an outbreak which more seriously affected the neighbouring districts in the County of East Suffolk. By arrangement, the Norfolk cases were isolated in the Ipswich Borough Small Pox Hospital, the County Council sharing expenses with the Loddon Rural District Council. This outbreak is dealt with in a special appendix to the Report of the Chief Medical Officer of the Ministry of Health, on "Small-pox and Alastrim," and in a letter to the *Lancet* by myself, "*Lancet*, December 25th, 1920." I have a few copies of the latter which are available for anyone particularly interested. No deaths occurred in Norfolk.

Scarlet Fever.

A mild type of this disease prevailed extensively in King's Lynn and the surrounding districts. The attack rate in the Borough of King's Lynn was 20.36 per 1,000 population; in West Lynn R.D., 60.98; in Marshland R.D., 4.76; and in Freebridge Lynn, 5.10. The attack rate for the Administrative County was 3.02. In addition to the sanitary districts mentioned above, the average rate for the County was exceeded in East Dereham U.D., 4.55; Walsoken U.D., 5.00; and Loddon and Clavering R.D., 4.20. The total number of cases notified in the Administrative County was 896. There were 17 deaths—giving a case rate mortality of 1.9 per cent. The Zymotic death-rate from Scarlet fever for the Administrative County was 0.057.

Diphtheria.

This disease was also in excess. 462 cases were notified in the Administrative County with an attack rate of 1.56. There were 47 deaths giving a case rate mortality of 10.17, and a Zymotic death rate, 0.15.

In North Walsham U.D. 62 cases occurred, showing an attack rate of 15.33. Other districts in excess of the average for the County were Cromer, 4.78; Diss, 1.67; Blofield R.D., 2.15; Depwade R.D., 1.67; E. and W. Flegg R.D., 3.68; Erpingham, 1.61; Forehoe, 3.2; Henstead, 1.59; Loddon and Clavering, 3.29; St. Faiths, 2.93; and Smallburgh, 2.78.

Enteric Fever.

35 notifications and 4 deaths in the Administrative County. The attack rate was 0.12—the case mortality rate was low, 11.49 per cent. From the reports of the District Medical Officers of Health I abstract the following points of interest:—

Blofield, R.D. 4 cases notified. Of these, one was found post-mortem to be Tubercular Enteritis and not Typhoid; one was a fisherman who contracted the disease out of Norfolk; one was a case of paratyphoid fever. The last case occurred in a family in which there had been Enteric in the previous year.

East Dereham U.D. Of the two cases notified one was paratyphoid.

Sheringham U.D. and Erpingham R.D. The cases in these districts were of the paratyphoid type. There was a common milk supply to all the cases, and enquiries into the health of the milkers resulted in suspicion being attached to “a particularly healthy looking boy of 16” who was stated to have been ill for 6 weeks with “Influenza” in November, 1917. He was eventually found to be a carrier of bacillus Paratyphoid B. “He was put off milking and no further cases occurred.”

Assuming that this boy was the infective agent it is fortunate that the number of cases arising from infected milk was so limited. The usual features of a milk outbreak are (1) sudden onset; (2) the large proportion of simultaneous attacks; (3) the age and sex incidence indicating that the victims are drinkers of milk. These features were clearly evident in the Hunstanton milk-borne epidemic, which occurred in the autumn of 1918, the full details of which I recorded in a contribution to the journal “Public Health,” January, 1919, page 40. The Hunstanton epidemic involved 22 victims (13 local and 9 visitors) in the course of two weeks, and searching inquiry narrowed the probable source of infection to a man who had suffered from Enteric fever many years previously. I had previously entertained suspicions of this man in connection with a small amount of endemic Typhoid fever in the village in which he lived, and specimens of his blood and urine, taken by Dr. Sumpter, Medical Officer of Health, had been examined from time to time without result. When examined at the time of the Hunstanton outbreak his blood was positive 1 in 25, but not in higher dilutions.

In the Sheringham and Erpingham cases the infection was fortunately scanty and intermittent. In June, 1919, 2 cases occurred in the same school that had 2 or 3 cases the previous autumn—but this time in a different house; another case occurred in Sheringham (same milk supply). In August, 4 boys from the school, and two cases in the Sanatorium (same milk) were notified.

Among persons who have had typhoid fever, or some fever of a suspicious nature (whether called “Influenza” or something else) are found from time to time intermittent “carriers,” that is, persons who excrete typhoid bacilli at intervals.

Occasionally a limited milk-borne infection may be derived from such a “carrier,” possibly because either (1) contamination occurs only for a short time with very few bacilli which are not very virulent; or (2) the bacilli only cause disease in a few exceptionally susceptible persons among the many who drink the contaminated milk.

The Hunstanton “carrier’s” history in conjunction with the Sheringham and Erpingham “carrier’s” history (the suspected boy, after prolonged observation in hospital, was eventually pronounced to be a “carrier” of Bacillus Paratyphoid B.), afford some Norfolk evidence supporting previous evidence of this nature.

I repeat an expression of opinion recorded in my paper in “Public Health.” “No person who has had enteric fever is a fit person to handle milk, which is a vehicle peculiarly adapted for carrying infection—indeed, it would be well if persons who have had enteric fever were debarred from any occupation in the preparation or distribution of any kind of food.”

There has been a marked and continued reduction in the incidence of Enteric fever in England. I think that one of the main factors in the continuation of this reduction during the present century has been the persistent warfare on “boiled” cockles from polluted layings which I initiated in the opening years of the century. At that time, although raw shellfish were already under suspicion, it was thought that the boiling of cockles rendered them harmless. But I demonstrated that “boiled” cockles from polluted layings gave rise to many cases of typhoid fever, and that the so-called boiling was not real boiling—the heat employed only being sufficient to kill the cockles and open the shells. This facilitated riddling through a sieve whereby the cockles are separated from the shells. But I found that the riddled cockles could be at once picked up with the naked fingers, though somewhat hot, and that on cutting into the cockle the interior contents were uncooked and barely warm; and consequently, although more superficially situated bacteria might be (and probably were) killed, many bacteria within the cockle would escape destruction—the internal temperature being below the thermal death point of typhoid bacteria. So clearly, the “boiled” cockle from polluted sources was not so innocuous as had been imagined. There was an enormous trade in these cockles, and it is a remarkable fact that from the time the “cocklers” could be prevailed upon to cease from laying the cockles in grossly polluted creeks; and further, to sterilize them by prolonged steaming, the incidence of typhoid fever fell extremely rapidly, not only in the town which I served as Medical Officer of Health, but particularly also in London and other large centres to which the “boiled” cockles went in immense numbers. The cockle is a favourite plebian “dainty,” and as cockles are sent to towns far removed from the gathering grounds, as well as to villages in the vicinity, the powers for mischief are very widely distributed. Consequently

the adequate control of the industry, naturally, at once achieved a remarkable reduction in the incidence of typhoid fever. I often wonder how many young men were preserved to fight for their country in the great war through the prolonged fight I had with ignorance, prejudice, and vested interests in the opening years of the twentieth century.

Although in the larger seaside centres where there is a cockle industry the requirements are now such that this popular article of diet has become comparatively safe; in smaller places, or where people go 'cockling' for themselves, there is still an occasional risk that cockles (or other shellfish) might be unwittingly picked up near a drain or sewer, unknown to, or unappreciated by the person gathering them, and unless very thoroughly boiled may give rise to disease. My own observations of 15 to 20 years ago, as well as those of Dr. Hamer, Medical Officer of Health to the London County Council, on repeated occasions, also lay under suspicion small flat fish, such as "dabs," which are often caught near sewers and which, being too small to be "gutted," are often eaten entire after insufficient cooking, that is, cooking insufficient to sterilize the gut contents of the flat fish. This source of typhoid infection is fortunately comparatively rare because, generally speaking, the fish are thoroughly cooked in boiling oil.

It is interesting to note that in the Hunstanton outbreak of 1918, without much room for question, and with a considerable degree of probability in the comparatively few cases which occurred in Sheringham U.D. and in Erpingham R.D. in 1919, there was reason in each instance to suspect a "carrier" infecting milk, which resulted in each instance in the important actual detection of a "carrier."

A further point to note is the relative number of cases reported as "paratyphoid"—which is a milder form of typhoid, associated with a bacillus closely resembling the typhoid bacillus, but differentiated by a serological test. Reserving for a scientific paper the arguments I would raise as to evolutionary factors accounting for this slight difference, I may call attention to the lower case mortality rate which is obvious in our Norfolk figures, and which corroborates previous records where infection is traced to the bacillus called "Paratyphoid B."

Measles.

In view of my comments in former Reports (see Reports of the County Medical Officer of Health for 1911, pages 34 and 35; précis of 1916 (see page 8); Report of S.M.O., 1913, page 27, it is interesting to record that Measles ceased to be a notifiable disease under the Notification Acts, by Order of the Ministry of Health, as from 31st December, 1919, the Ministry having arrived at the conclusion that the system of notification laid down in the L.G.B. order of 27th November, 1915, was not an essential factor in a practical scheme having the diminution of the mortality from Measles as its aim, and that its continuance was not the best method of dealing with the problem. The method of notification through the schools, which has been in vogue in Norfolk on my initiative since 1908, is much more effective, through the consequent procedure organised for preventing the spread of the disease.

Of far greater value than the Order of 1915, were the Circular M. & C.W. 4, 1918, and Circular No. 5 (M. & C.W. 11), 1919, which laid down that, in aid of the provision for maternity and child welfare, grants not exceeding one-half of approved expenditure are payable by the Ministry during each financial year in respect of the following services for measles in the case of children under five years of age: (1) the salaries and expenses of health visitors engaged in maternity and child welfare work (including the home visiting of cases of measles); (2) home nursing in cases of measles; (3) the provision of hospital or convalescent beds for measles occurring in children under five years of age, either permanent or temporary in character.

In Norfolk in 1919 only 5 deaths were attributable to Measles, and 3 of these were children over five years of age. Health Visitors were utilised by me for visiting homes in villages in two measles outbreaks—there being no village nurse available.

Whooping Cough.

This is a particularly distressing affection, and is responsible for the deaths of many infants and young children. This malady accounted for the deaths of 45 children in Norfolk in 1919. Of these, 26 were under 1 year, 9 between 1 and 2 years, and the remaining 10 over 2 years, but all under five.

Influenza.

In 1919, 255 deaths in Norfolk were attributed to Influenza. Of these, 62 occurred at ages of 65 and upwards; 58 between 45 and 65 years; 65 between 25 and 45 years; 27 between 15 and 25 years; 16 between 5 and 15 years; 27 between 0 and 5 years. On the whole the mortality was tending to revert to the older and younger ages, though still far too many were carried off in the prime of life. So short is the incubation period and so extremely infective is the disease when in epidemic form, that the chief advice for prevention is to avoid, as much as possible, close inter-communication with others, especially in overcrowded and ill-ventilated rooms. When illness has commenced, the individual (both for his own sake to expedite recovery, and for communal reasons to lessen the spread of the disease), should at once betake himself to bed. In 1918, the following brief instructions, which I prepared, were issued to Head Teachers of affected schools for distribution: "Patients should stay in bed for 2 or 3 days at least at the commencement of illness. All scholars should gargle with solution (1 in 5,000) of Permanganate of Potash, and sniff same solution through the nostrils. Rooms should be well aired, but patients must not be in draughts.

Handkerchiefs should be held in front of mouth when coughing or sneezing, and afterwards boiled. Contacts in perfect health need not be excluded, but any contact showing the slightest evidence of a cold is to be excluded until well, because the disease is most infectious in its early stages."

The problem of the cause of Influenza is not yet definitely solved, notwithstanding its more or less constant prevalence during the past 30 years, including enhanced prevalence and virulence in epidemic form at intervals. An organism known as Pfeiffer's bacillus is associated with the disease, but has not yet been uniformly or universally demonstrated. In many respects Influenza resembles an ordinary feverish cold, only with enhanced virulence and infectivity, attended with greater pyrexia and more severe depression. As with a common cold, an attack not only does not confer immunity, but appears to render some persons even more susceptible to further attacks, at any rate for a time; though I think, eventually, a certain degree of immunity is attained. As in all previous epidemics of influenza the great majority of persons attacked suffered from a two or three days fever with a moderate depression of strength. This simple type was the commonest but, as in previous epidemics, there were numerous cases which could be divided into pulmonary, gastric, septicaemic and cerebral types. The most remarkable feature about the influenza of 1918-19 was the number of deaths which occurred in young adolescent and adult people through severe lung complications; inflammatory conditions giving rise to small hæmorrhages and an albuminous exudate in the lung air-cells, which prevented access of air to the blood—in short, which suffocated the sufferers in addition to the toxic effects. There were two distinct "waves" of prevalence in 1918, the first in the summer, which was of a milder form than the second autumnal wave, when pulmonary complications were very frequent and fatal. The unusual age incidence was in evidence in both these waves of prevalence. A third rise in February, 1920, was again mild in character, and the age incidence reverted to older and younger persons. In all probability the unusual features of the 1918 epidemics were largely due to enhanced virulence of associated organisms—streptococci, pneumococci, etc., in symbiotic relationship with Pfeiffer's bacillus.

Encephalitis Lethargica.

Whether this affection is an independent disease, or is in some obscure way connected with Influenza, is at present unknown. It became notifiable for a provisional period of one year on the 1st January, 1919, under the Public Health (Acute Encephalitis Lethargica and Acute Polio-Encephalitis) Regulations, 1918. This has since been extended *sine die* under an amending order (December 31st, 1919).

During the 1st quarter of 1919, 1 case E.L. was notified at King's Lynn, and one in Mitford and Launditch R.D. (not confirmed). During the 3rd quarter, 1919, 1 case was notified in King's Lynn and 1 case in Walsingham R.D.

Thus, in all, there were 4 notifications—one of which was not confirmed in hospital. Dr. Fisher, Medical Officer of Health Walsingham R.D., notes that the Walsingham case (aged 12) occurred in an insanitary quarter at Fakenham, was removed to hospital and recovered.

The Medical Officer of Health for King's Lynn makes no comments, but from the notification returns we learn that 1 case was between 5 and 15 years and the other between 45 and 65 years. The attending doctor (Dr. Allison, now deceased) asked me to see the first case, a boy of 10. He was lying on his back, semi-comatose, with dilated pupils, light reflex barely perceptible, definite facial paralysis, abdominal reflex brisk, plantar reflex absent.

The epidemiological data were interesting and suggestive. This boy was the first to be taken ill in the house. Two days later his mother and the infant in arms had symptoms of ordinary catarrhal influenza. Influenza was prevalent (January, 1919) in King's Lynn.

Important epidemiological facts are that Encephalitis Lethargica is prevalent in various parts of the world. In England and Wales, upwards of 500 cases were notified in 1919 from all parts of the country. In other words, the dissemination of Encephalitis Lethargica is as world-wide as has been that of Influenza.

In the history of medicine pandemics of Influenza have been generally followed by outbreaks of cerebral fevers and lethargic illness with palsies. Though I rank myself with Dr. Hamer and Dr. Crookshank, of London, in supporting the view that the syndrome *soi-disant* Encephalitis Lethargica is but a manifestation of the protean epidemic disease called Influenza, the more commonly accepted view is that it is a well defined disease. Apart from the defined clinical symptoms, the most weighty evidence so far adduced in favour of the latter view is a report on an outbreak of Encephalitis Lethargica in a Girls' Home, but even this is qualified by the remarks of Dr. McNalty, of the Ministry of Health, who investigated the outbreak, for he says, "In the short experience of Encephalitis Lethargica in this country it is already apparent that its biological properties are altering." Surely this is a further point of contact with Influenza. In my book on "Evolution and Disease," page 20, I referred to the causal organisms of Influenza as of "unstable or less specific type," and this may be a reason why a previous attack of Influenza confers little or no immunity against further attacks.

Other Diseases Notified.

Puerperal fever, 7; Cerebro-Spinal fever, 7; Poliomyelitis, 4; Ophthalmic Neon, 29; Polio-Encephalitis, 1; Dysentery, 6; Anthrax, 3; Trench fever, 2; Malaria, 103.

Malaria.

The cases were almost universally among demobilised men who had served abroad. A civilian case occurred in Walsingham R.D., at Great Ryburgh, in the person of a child infected by its father through the agency of *Anopheles* in the neighbourhood. The patients were provided with mosquito-proof curtains.

Puerperal Fever.

The Registrar-General's returns show 9 deaths, as against 7 notifications. The Zymotic death-rate was .02.

Ophthalmia Neonotorum.

All notified cases were followed up and treated either by doctors, nurses, or health visitors, with good results. Some were of a mild nature and probably not of Gonococcal origin.

Trench Fever and Dysentery.

Ex-service cases.

SECTION V.

Tuberculosis.

In February, and again in June, 1919, the County Medical Officer of Health presented reports to the Public Health Committee, as instructed, in which were adumbrated a scheme providing for

1. The County Medical Officer of Health as chief Administrative Tuberculosis Officer.
2. The division of the County into five or six Dispensary Areas, with the appointment for each area of a Clinical Tuberculosis Officer, who would also act as School Medical Inspector and Medical Officer of any Clinic established in the area.
3. Provision of beds by contract with Sanatoria already in existence in Norfolk.
4. The provision of one or two "observation" beds.
5. The provision of beds for advanced cases; where necessary.
6. The provision of a Farm Colony for patients with arrested disease.

This commended itself to the Public Health Committee, but the Education Committee preferred to carry on the work of Medical Inspection separately with its own medical staff.

The Norfolk branch of the British Red Cross Society, having been advised by Dr. Burton-Fanning that there was a great need for the after-care of discharged soldiers and sailors, who had received benefit from a short term of Sanatorium treatment, informed the County Council that they were prepared to purchase and equip a suitable site for a Farm Colony, provided a statutory body undertook its maintenance. After considerable delay, involved by inspecting sites and by negotiations between representatives of the County of Norfolk, the County Borough of Norwich, the County Borough of Great Yarmouth, and the Norfolk branch of the British Red Cross Society, the broad lines of a comprehensive scheme were drafted, which included as a commencement

1. The appointment of a Tuberculosis Officer and resident nurses in defined areas, acting under the supervision of the County Medical Officer of Health.
2. Contracts with existing Institutions in the County for beds for cases needing institutional treatment.
3. Suitable cases, after institutional treatment, to be transferred to the Farm Colony.

It was agreed that all cases hitherto dealt with by the Norfolk Insurance Committee should be included in the scheme. the County receiving the allowance hitherto made to the Insurance Committee for the purpose.

Farm Colony.

A site of about 700 acres, situated at Stanninghall, was at length selected, and was approved by the Ministry of Health. This was purchased by the British Red Cross Society and presented for the purpose. Its management is vested in a Committee consisting of representatives of the three statutory bodies (Norfolk, Norwich and Yarmouth Councils) and of the British Red Cross Society (the donors).

In selecting applicants, it was agreed that preference would be given to discharged men, but it was thought there would be room for all in time.

The original intention was to erect suitable buildings for patients and their families, that the men should be employed, as deemed prudent, upon the farm and in industrial work, with a fair wage, not necessarily strictly in relation to the amount of work done, but dependent upon the patient doing his best under medical supervision.

It was also thought that, in course of time, all forms of treatment would probably be provided for at the Colony, and would cover the needs of the Administrative County of Norfolk, as well as those for Norwich and Yarmouth, and possibly outside cases, should there be room.

This broad outline of the scheme was approved by the Ministry of Health, and a Tuberculosis Officer (Dr. W. B. Christopherson) was appointed and commenced duty on August 7th, 1920.

A Tuberculosis Dispensary, with Laboratory and office accommodation has been provided at Bank Court, The Walk, Norwich. The Tuberculosis Officer visits the Dispensary on Tuesdays, Fridays and Saturdays.

The Tuberculosis Officer also superintends the Farm Colony at Stanninghall, and visits (in co-operation with local practitioners) cases of Tuberculosis in the County area, and advises as to treatment, whether institutional or domiciliary, both for insured persons (at present to the Insurance Committee) and for uninsured (Public Health Committee). Up to August, 1920, Dr. Burton-Fanning, F.R.C.P., was medical adviser to the Insurance Committee.

Under the National Health Insurance Act, 1920, the taking over of Sanatorium benefit and Tuberculosis work generally from the Insurance Committee, which had been originally fixed for the 5th July, 1920, was postponed by the Ministry of Health to the end of the year, since when it has again been postponed to the 30th April, 1921.

The following portion of my report was brought under the notice of the Public Health Committee in August, 1920:—

1. In "The Times" of July 14th, 1920, appeared an article by a Medical correspondent contending that the campaign against Tuberculosis has broken down badly—diagnosis too late, notification and so prevention inadequate, treatment of small avail—"We are neither preventing nor curing; and yet vast sums are being spent each year on this effort.

2. This is a strong statement—and rather stronger than the evidence available justifies—but up to a certain point it is not inaccurate—diagnosis is often too late, notification in some districts is inadequate, and treatment in many cases is of small avail—but this does not justify the sweeping statement that we are neither preventing nor curing, though the results as yet may not seem commensurate with the expenditure.

3. There are two methods of estimating the relative amount of Tuberculosis in any given area and population—(1) by notification, (2) by deaths.

4. Notification, though extremely necessary and useful, is to some extent unavoidably inadequate; and the fewer the facilities for expert diagnosis which exist the more inadequate are the notification returns.

5. Since all deaths must be registered, with cause of death stated, the death returns afford more reliable evidence of the amount of Tuberculosis in a given area where no complete scheme for the control of Tuberculosis exists. Such an area, up to the present, is the Administrative County of Norfolk.

6. But even as regards deaths, the number of deaths in a given period of time (say a year) is affected by other factors—social, international, meteorological, etc. This is illustrated by the following figures.

7. Tabular Statement of Deaths from Tuberculosis in the Administrative County of Norfolk.

Year	URBAN DISTRICTS			RURAL DISTRICTS		
	1919	1918	1917	1919	1918	1917
Pulmonary Tuberculosis ...	62	71	53	190	266	199
Other Forms ...	12	25	23	50	59	50

8. Why should the year 1918 show such a marked increase of deaths from Pulmonary Tuberculosis? Surely one may seriously suggest the contemporary conditions of the short rations of food, and the strain of the culminating year of the War, associated with the terrible pandemic of Influenza which swept the World in 1918; and of these factors, the last was the greatest, out of all proportions to the others.

9. That exceptional conditions prevailed in 1918 is further evidenced by the death figures for pre-war years (before war-strain was appreciated) as compared with the above.

10. Taking the deaths from Pulmonary Tuberculosis in the Administrative County of Norfolk (combining Urban and Rural Districts), the following are the figures for consideration:—

Year	1912	1913	1914	1917	1918	1919
Deaths from Pulmonary Tuberculosis ...	255	273	267	252	337	252

11. Clearly 1918 was an abnormal year, and it would be ridiculous to assume that there was an increase in the relative amount of Tuberculosis in that year; but without doubt the constitutional factors of 1918 lessened the resistance of the tissues of persons affected with Tuberculosis.

12. The figures for 1917 and 1919 might suggest a slight decrease in prevalence, though the more reasonable assumption would be that in the absence of comprehensive and coordinated effort (apart from Sanatorium benefit as exercised by the Insurance Committee) the incidence of the disease remains very much the same now as in 1912, when the administration of the Insurance Act began.

13. In any complete and comprehensive scheme for dealing with Tuberculosis in relation to Public Health, two main objects should be in view—(1) for the patient, if the disease is not too advanced, to secure recovery and a return of full working capacity, (2) for the community, in cases where the disease is communicable, to prevent it spreading to healthy persons.

14. Hitherto too much attention has been given to Tuberculosis as a disease calling for specialised treatment, and too little to its Public Health aspect requiring the simultaneous adoption of preventive as well as remedial measures.

15. A comprehensive scheme for Tuberculosis to be efficiently carried out necessitates a large and varied personnel.

- (1) The Medical Officer of Health, who is responsible for the administrative control of preventive measures, which may include Institutional treatment where a home is unfit. Improved housing and a pure Milk Supply are essential in a comprehensive campaign against Tuberculosis.
- (2) The Tuberculosis Officer, who is responsible for the clinical work in the scheme. He has to diagnose the disease in its early and curable stage; advise the appropriate form of treatment for each type of disease, examine contacts and persons suspected to be infected with Tuberculosis, and supervise the effective carrying out of treatment. He necessarily comes into close contact with the patient, the family practitioner, and the Medical Officer of Health.
- (3) The Medical Practitioner who is frequently consulted by parents suffering from early Tuberculosis. He is responsible for the treatment of cases of Tuberculosis in the home. More frequent and intelligent co-operation is needed in the future between the Medical Practitioner, the Tuberculosis Officer, and the Medical Officer of Health.
- (4) The Sanitary Inspector has to note existing insanitary defects and to report them to his Authority for statutory remedy. He also has to carry out measures of disinfection.

(Some Counties have appointed a County Sanitary Inspector, whose duties include special reference to housing in relation to Tuberculosis.)

- (5) The Health Visitor reports as to the circumstances and housing conditions, and supervises the carrying out of preventive measures. For this purpose trained Health Visitors have a knowledge of elementary hygiene and the general methods of prevention. Their usefulness would be increased in some instances by a study of the care and nourishment of infants and children, the selection and preparation of food, and the finding of suitable employment for tuberculous adults. These duties are distinct from those of
- (6) The Nurse, whose nursing duties vary with the type of the disease and the nature of the treatment adopted. In Rural areas the duties of Health Visitor and Nurse may be combined in many instances, where a Nurse has the qualifications of a Health Visitor as defined above (5).
- (7) The Patient. Unless the active and intelligent co-operation of the patient is secured, treatment will fail.
- (8) Voluntary Workers can assist, if they so desire, in statistical and secretarial work, and, if trained, as Health Visitors.

16. So much for personnel. As regards Units in a comprehensive scheme, there must be close co-operation and co-ordination between the centre to which, in suitable areas, patients go at fixed times for advice and instruction, the taking of weights and temperatures, etc.—the so-called Dispensary Unit—and the Hospital or Sanatorium, or Colony, or Open-air School, or After-care Committee, or Private Practitioner.

These co-ordinated facilities aim at prevention of spread of the disease, as well as at securing recovery and maintaining the working capacity of the patient.

17. Those with adequate experience of preventive as well as of curative medicine consider that the first essential Unit of any comprehensive scheme is that which has been somewhat unfortunately termed the Dispensary Unit. This term suggests the dispensing of medicines—which is the least of the reasons for the existence of a Dispensary Unit—its more essential objects being for the continuance of observation of patients and of contacts and suspects, and for securing intimate working relationship between Tuberculosis Officers, private practitioners, hospitals, sanatoria, charity organisations, etc. The success of a Dispensary Unit will be gauged not by the number of bottles of cod liver oil, etc., given out, but by the proportion of early cases of Tuberculosis diagnosed and effectively treated before the disease becomes communicable to others.

18. The second Unit, or Institutional Unit, is of importance, and comprise Hospital, Sanatorium, and Colony. Whatever may be the ultimate working of Stanninghall, at present we have to rely upon different Institutions supplying three distinct forms of treatment. (There will be clear advantages when all are combined in one Institution.) The Hospital is asked to provide for the treatment for acute and advanced cases of Pulmonary Tuberculosis and non-Pulmonary Tuberculosis; the Sanatorium provides for early and intermediate cases where there is a prospect of arrest of cure; and the Colony has been initiated for granting facilities for combining treatment with training in suitable remunerative employment, and with the object of erecting permanent homes for a certain number of families who will work on the estate under medical supervision.

19. When, in course of time, the Stanninghall Colony undertakes the preventive hospital treatment of advanced cases, and the sanatorium conservative treatment of quiescent cases, as well as its present role in improving and maintaining the economic standard of patients who have already derived benefit from Sanatorium treatment, the three main conditions which will render possible the successful treatment of Tuberculosis will be attained in one Institution.

20. To complete its Institutional value, provision will also be needed for cases of surgical non-pulmonary Tuberculosis, and for the pulmonary forms of Tuberculosis met with in children, due regard being paid to the necessity for prolonged residence.

21. Under existing circumstances there must of necessity be a considerable amount of domiciliary treatment, which at present is far from satisfactory, and will continue so unless more satisfactory home conditions and more adequate and efficient medical and nursing services are provided.

22. LABORATORY FACILITIES.—These are of great importance in connection with Tuberculosis, and I once again raise the question of a County Laboratory in connection with Tuberculosis, Enteric Fever, Diphtheria, Cerebro-spinal Fever, etc. A suitable room could be fitted up at the premises on The Walk. I have already in my office a good microscope, and at the cost of a few additional pounds a commencement could be made. Considerable amounts are paid annually to other bodies by the Education Committee, and by the various Sanitary Authorities in the County—which would revert to the maintenance of the County Laboratory when one is established.

In the meantime it is of great importance that arrangements should be immediately made for the examination of sputa. Both Dr. Christopherson and myself have had large experience of the bacteriological examination of sputa, and between us we hope we may be able to cope, at any rate, for a time, with this part of the work of a County Laboratory.

What is immediately needed is the fitting up of a room with gas and water suitably laid on, and a working bench; together with a few stains and implements such as centrifuge and steriliser. The cost of the latter, so long as the work is confined to the examination of sputa, will be inconsiderable.

Cases of Tuberculosis notified by District Medical Officer of Health (primary notifications) during 1919.

		Males	Females	Total
Pulmonary Tuberculosis		114	118	232
Non-pulmonary Tuberculosis		28	33	61
				293

Summary of notifications under various age periods from 29th December, 1918, to 3rd January, 1920.

COUNTY OF NORFOLK.

		Notifications on Form A												Notifications on Form B			Notifications on Form C		
		Number of Primary Notifications																	
Age Periods		0-1	1-5	5-10	10-15	15-20	20-25	25-35	35-45	45-55	55-65	65 & upds.	Total Prmy. Form A.		5-10	10-15	Total	Poor Law	Sanatoria
Pulmonary	Males ...	1	1	4	4	11	17	32	18	10	4	6	106	108	1	5	6	1	34
„	Females	—	1	5	5	16	14	40	14	12	5	2	114	114	2	2	4	—	8
Non-P.	Males ...	1	7	4	2	4	3	4	2	1	—	—	28	28	—	—	—	—	—
„	Females	2	4	6	3	2	5	2	3	2	1	1	30	31	—	2	2	—	—

The Deaths registered during the same period were:—

	Urban Districts		Rural Districts		Total		Gr. Total
	M	F	M	F	M	F	
P. Tuberculosis ...	26	36	97	93	123	129	252
T. Meningitis ...	2	2	11	9	13	11	24
Other forms of T. ...	4	4	19	11	23	15	38
							314

A. Population of Administrative County of Norfolk, 1911 Census	=	321,733
B. Population „ „ estimated by Registrar General for Death Rate, 1919	... =	296,494

Tuberculosis Death Rate for 1919, based on A	=	0.97	Phthisis Death Rate	=	0.78
„ „ „ „ B	=	1.05	„ „	=	0.84

From the above returns it will be observed that there were 252 deaths from Pulmonary Tuberculosis and 232 notifications during the year, while there were 62 deaths from non-Pulmonary Tuberculosis as against 61 notifications. Notifications should be in considerable excess. It is clear, therefore, that there is still considerable slackness in some districts as regards notification. The districts which were most remiss were Mitford and Launditch R.D. and E. and W. Flegg R.D., but I am glad to say better returns are now being made, and District Medical Officers of Health are reminded by me from time to time if returns do not appear to be coming in regularly.

Since the Norfolk County Council has now definitely committed itself to a comprehensive Tuberculosis Scheme and has appointed a Tuberculosis Officer, I feel it my duty to make a comprehensive report on Tuberculosis, and for this purpose I shall draw largely on the published writings of Sir R. W. Philip, M.D., F.R.C.P., Professor of Tuberculosis in the University of Edinburgh, who has worked continuously at the problem of Tuberculosis since 1886, and whose organisation for combatting Tuberculosis has been adopted in England and several Continental countries.

Since Dr. Henry MacCormac, of Belfast, in 1865, published his far-seeing views on Tuberculosis, no physician has higher claim to pioneer work on Tuberculosis than Sir Robert Philip, through whose enthusiastic efforts was founded the first Tuberculosis Dispensary—the Victoria Dispensary for Consumption, which was inaugurated in Edinburgh in 1887, and which did such good work that it was enlarged in 1891. This was followed in 1894 by the inauguration of the Royal Victoria Hospital, Edinburgh, as a Sanatorium for early cases, which in its turn was extended in 1903. A further extension in 1906 provided a pavilion for advanced cases. These facilities led on to the introduction of compulsory notification of Consumption in Edinburgh in 1907, and the inauguration of the Royal Victoria Hospital Farm Colony in 1910. To Edinburgh we look, therefore, for the results of a comprehensive scheme of slow organic growth and complete in its details.

Dr. MacCormac's prophetic statements in 1865 were unequivocal. "Tubercule is simply impossible in the case of persons who respire habitually air not pre-respired, and who sleep in an atmosphere incessantly renewed." . . . "If a person will but occupy three or four hours daily with active open-air life and effort, and sleep in a chamber the windows of which shall be pulled down winter and summer the night through, he may bid defiance to Consumption and Scrofula for ever and ever." . . . "If the inhabitants of Great Britain and Ireland would but consent, day and night, to live in a pure unprebreathed atmosphere it would put a total close to the ravages of consumption and scrofula, white swelling, tabes mesenterica, water on the brain—in fine, the abhorred family of tuberculous disease." We have air as pure as any obtainable on Californian or Mexican hills, air abounding in oxygen and ozone, air, in short, which, if we only do not respire it twice, leads to as perfect security from tubercular disease here as there."

Professor Béranek, of Neuchatel, bears witness that Scotland has incontestably been the first civilised nation to systematically and completely organise the anti-tuberculosis campaign—Dr. Philip being the originator of that noble and generous campaign. From the year 1887 onwards he faced, with singular clear-sightedness, the solution of the social problem of Tuberculosis. That solution is made dependent on (1) The Anti-Tuberculosis Dispensary; (2) The Sanatorium for indigent curable cases; (3) The Hospital for advanced cases; (4) The Farm Colony for Convalescents. By the harmonious action of these, together with administrative measures such as notification; assistance to indigent workers and their families, etc., there is hope for the extirpation of Tuberculosis.

Edinburgh statistics showed a diminution of 42 per cent. in the mortality from Pulmonary Tuberculosis in that city during the decennium 1897-1906.

Germany, which was the first country to establish sanatoria, had originally declared the sanatorium to be the one and only method of combating Tuberculosis—but it is significant that she subsequently realised that this means alone is insufficient, and completed her anti-tuberculosis equipment on the lines of the Edinburgh system. The seed sown by Dr. Philip thirty-three years ago in Edinburgh has borne fruit, and little by little his ideas have advanced through the civilised world.

Of course, a complete and comprehensive and co-ordinated campaign against Tuberculosis must mean the expenditure of a very large amount of money, but the expenditure is justified because of the still more enormous cost of leaving the Tuberculosis problem untackled. Pulmonary Tuberculosis claims over 50,000 victims every year in the United Kingdom, disables at least 150,000 more; while there are probably over 500,000 infected persons. It is the direct cause of one-eleventh of the pauperism in England and Wales, which involves a charge on the State of over one million sterling per annum.

The Ministry of Health is very properly directing concentrated attention to the proper housing of the people. But for the unfortunate conditions existing in the aftermath of the Great War, the housing problem could, no doubt, be more expeditiously and economically dealt with than is at present practicable. Until proper houses, capable of adequate ventilation, are provided, and the occupants are properly instructed in the necessity of breathing only fresh unprebreathed air, the main factor in the production of Tuberculosis will remain untouched. Facts and statistics have accumulated which go to show that Tuberculosis results chiefly from the exclusion or insufficient supply of fresh air in the dwelling-room, workroom, and other haunts of man, and further, that in proportion as the supply of air and sunlight is improved, under better conditions of sanitation, there follows a corresponding reduction in the mortality from Tuberculosis. Not only this, but there is abundant evidence that open-air treatment is successful in proportion as it is carried out completely, in winter no less than in summer.

The brilliant results achieved under æro-therapy in the arrest of what seemed hopeless conditions of disease afford encouragement for the wider adoption of open-air measures with a view to prevention. What is capable of effecting the cure of definite Tuberculosis is *a fortiori* capable of preventing its appearance. Hence in my Report (as School Medical Officer) for the year 1910, I said, "All children will benefit by instruction in the open air, and benefit will result when combined with good feeding to debilitated children." Again in 1911, "If only cottages and schools were dry and well-ventilated and ventilation better observed at night, during which the inmates spend nearly half their lives at home, Tuberculosis should be a rare disease."

As regards housing requirements, it should be a matter for serious consideration and public enlightenment whether (instead of spending large sums of money on ordinary cottages with small rooms) accommodation for families in rural areas may not be better provided by means of "shelters," such as are constructed for tuberculosis cases, allowing not more than two beds to each shelter, but ensuring that each individual shall have a good separate bed with sufficient bedclothes, and yet sleep under open-air conditions. A central pavilion could be fitted as a kitchen for each family and their household goods. Bathing arrangements might be made in another pavilion, which could be so placed as to serve more than one family. Connecting paths of concrete with raised centre for dryness would connect these with the sleeping pavilions. Care should be taken that this central kitchen convenience is not occupied for a longer time than necessary, or only by those whose duties take them there. Lavatory conveniences can be given their ideal sanitary position (but would require, as even now under existing conditions) adequate attention and supervision. The cost of four such "shelters" or "pavilions" should not exceed one-fourth of the cost of a cottage for erection, and would provide more and better accommodation than a three bedroom cottage. If the provision of bedsteads and bedding was included amongst the fittings, a whole family could be provided with adequate shelter and separate beds for each individual under healthy open-air conditions at less than half the cost of an ordinary cottage. If these suggestions for housing are feasible (the country being committed to a large new housing programme) there would be little need for any large capital expenditure on new Sanatoria, or other institutions, indeed a good deal of money now spent on residential treatment might be saved. Well-organised propaganda work should encourage people in rural areas to get back to natural open-air methods of living and sleeping. Under such conditions infectious diseases, including Consumption, will be reduced almost to the vanishing point, especially if, at the same time, *adequate nutrition* of the body is provided for on sound physiological lines. Sufficient fresh unprebreathed air, sufficient nourishment, and sufficient exercise, will eventually breed a strong and healthy race, and would much improve hereditary weaknesses even if strict eugenics is impracticable.

Hospitals for Advanced Cases.

These are the sure methods for prevention, but existing centres of infection, including the large number of living tuberculosis subjects, must be provided for. From the public health viewpoint it is important to make adequate provision for the advanced cases of Pulmonary Tuberculosis with abundant bacillus-laden expectoration. They should be removed from homes where they cannot have a separate bedroom to a hospital for advanced cases, which they should never leave again even if their health somewhat improves. If the separate shelter or pavilion housing of families suggested by me is practicable, they could, of course, have separate accommodation near their relatives, but they would lack hospital amenities and supervision. The hospital for advanced cases is preferable because it will ensure the isolation of the dangerous cases, which is a primary duty of a health authority. Under a complete and comprehensive scheme the County Council becomes the local authority on which this duty devolves. Whether, as seems likely, it is preferable to have the hospital for advanced cases situated at the Farm Colony, or elsewhere; from a sanitary and economic standpoint, patients once admitted must not be discharged save for quite exceptional reasons. "To make the patient a little better and then to discharge him would almost completely negative the purpose for which the hospital would be provided." But short of hospital provision, the separate open-air pavilion scheme of housing would largely reduce the risks which exist in ordinary cottages, if combined with adequate nutrition.

Sanatorium for Selected Persons with a view to Cure.

While isolation for advanced cases is desirable from one point of view of prevention, the sanatorium, which in early cases is concerned chiefly with the effective arrest of the disease, and the education of the public how to treat and prevent it, has also its place in a scheme for the prevention and eradication of Tuberculosis.

The great aim of Sanatorium treatment is to get the patient at a sufficiently early stage, and by means of open-air treatment, proper dietary, and a carefully conceived regimen, to assist Nature in her attempt to overcome the tubercle bacillus. The purpose is to increase vital resistance, and establish more or less immunity to the disease. In many cases cough and sputa diminish and the latter often becomes free of tubercle bacilli. Each sanatorium pavilion is so constructed as to secure a maximum of air and sunlight, and is supplemented by open shelters distributed throughout the grounds. Since Sanatorium treatment will undoubtedly cure or arrest disease in many cases, even those with undoubted hereditary taint, the open-air life for all persons (especially those with hereditary taint) should combat hereditary, which according to Karl Pearson, and others, plays the most important part in phthisis.

Open-air Colony.

While Sanatorium life is a life of treatment, it need not, and should not, be for the great proportion of patients an idle existence. Subject to doctor's directions they may contribute more or less to the upkeep and beauty of the place. Later, selected patients would be transferred to the Colony, where they would remain under medical surveillance, and the character and amount of their work would be suitably gauged and directed.

The Clinic (or Dispensary).

Whether constituted by the Tuberculosis Officer himself visiting at scattered homes or by the use of some convenient centre in more populous areas where patients can be received, the fundamental purposes of a Clinic (dispensary) are to secure the examination of patients with a record of every case, the bacteriological examination of sputa, etc., the instruction of patients how to treat themselves or how to prevent or minimise the risk of infection to others, the dispensing of sputum bottles, disinfectants (and possibly occasional medicines where the patients' condition seemed to warrant it), food stuffs and the like; the visitation of patients at their own homes by (1) a qualified medical man and (2) a specially trained nurse, for the double purpose of treatment and of investigation into the state of the dwelling and general conditions of life and the risk of infection to others; the selection of suitable cases for sanatorium or hospital treatment, and the supervision of patients discharged from institutional treatment; the guidance generally of tuberculosis patients and their friends, and dealing with inquiries from all interested persons on all questions concerning Tuberculosis.

General Remarks.

The strength of such a Scheme lies especially in its organisation and co-ordination. The key to complete success lies in the harmonious co-ordination of well-directed measures.

The Medical Officer of Health, to whom notification is made, must be in close touch with the hospital for advanced cases and with the Tuberculosis Officer (dispensary). By means of these he can effect a great deal in the direction of prevention.

Since writing the above there has come to hand the Report of the County Medical Officer of Health of London for the year 1919, which embodies an exhaustive report on the arrangements for the treatment of Tuberculosis in London.

After detailed inquiry, it is estimated that full efficiency cannot be secured if a Tuberculosis Officer has to deal with a population having more than 120 deaths per annum from Tuberculosis. On this basis the Administrative County of Norfolk would require three whole-time Tuberculosis Officers for efficient working. I will report on this again when Dr. Christopherson has settled down and can indicate what additional help is needed. One of the most valuable functions of the Tuberculosis Officer is visiting the patients in their homes. Another is the intensive study of individual cases, so that a diagnosis in doubtful cases may be arrived at within a reasonable time. When the Tuberculosis Officer has formed the opinion that a particular patient is probably not suffering from Tuberculosis, that patient should not continue to take up time which is needed for others, but arrangements could no doubt be made to see such a patient again, if necessary, in a year's time.

I quite agree with Dr. Burton Fanning and others that a Tuberculosis Dispensary should not be run on the "bottle of medicine" system. Patients must be taught to rely more on such essential measures as hygiene and diet. Any medicines deemed requisite for symptomatic treatment may be left entirely to the general practitioner in charge of a patient.

No authoritative statement having so far been made as to what is meant by a complete Tuberculosis Scheme, I venture to draw the attention of the Council to "a Complete Tuberculosis Scheme suggested at a meeting of the League of Red Cross Societies, at Cannes, in April, 1919, the Committee consisting of representatives of Great Britain, France, United States, Italy, and Japan.

(1) We believe that in an organised campaign against Tuberculosis the following factors are fundamental and indispensable:—

1. Dispensaries on an adequate scale, furnished with laboratories and appropriate equipment and affording provision for early diagnosis, including the examination of "contacts" by expert physicians, and with specially-trained visiting nurses, who will carry into the homes of the patients the necessary care, assistance, instruction, and advice, who will specially consider the needs of children, and who will direct the patient to appropriate agencies for this purpose.

2. Provision for the careful, regular inspection of school children with a view to the early detection of Tuberculosis.

3. Hospital treatment, on an adequate scale, of acute, advanced, and hopeless cases of Tuberculosis, separated from other cases not infected with Tuberculosis.

4. Sanatorium facilities for all suitable cases of Tuberculosis.

5. Continuous popular education regarding Tuberculosis, its causes and prevention, by all suitable means and agencies.

(2) It is evident that Tuberculosis is inextricably associated with the general living and working conditions of the people, and we therefore recommend the encouragement of legitimate efforts directed towards the improvement of these conditions. We regard as of particular importance in this connection the care of children and the problems of housing, nutrition, and alcoholism.

(3) We recommend the institution of appropriate measures to prevent the transmission of tuberculosis.

(4) We approve the establishment of open-air schools for the accommodation of children already affected by, or suspected of, Tuberculosis, and measures should be taken to protect children against contagion in the household by placing them with healthy families in the country or in special asylums, when it is not practicable to remove the infected patient from his family.

(5) We call attention to the importance of the extension of the open-air principles to all institutions and places where many individuals are housed together, such as barracks, orphanages, workhouses, penitentiaries, and the like.

(6) Experience has shown us the importance of careful supervision of the Tuberculous patient during the entire period of his illness. We therefore urge the need for close co-operation between the several institutional factors (dispensaries, hospitals, sanatoria, etc.), and the more extended development of skilled social service under medical direction.

(7) We think that attention should be drawn to the great risk to which Tuberculous patients are exposed through the exploitation of alleged cures without scientific authority.

(8) Inasmuch as a problem of particular difficulty is that of providing suitable occupations for those patients with Tuberculosis able to perform a certain amount of work under favourable conditions, we recommend the encouragement of efforts for the establishment of agricultural and other colonies and the organisation of suitable industries, which should be linked up with the dispensaries and sanatoria under medical supervision.

(9) Recognising that accurate knowledge of the distribution of Tuberculosis is an essential preliminary to its control by public authorities in any community, we approve the principle of compulsory notification of Tuberculosis to the health authorities under appropriate regulations.

(10) We call special attention to the capital importance of scientific research in the field of Tuberculosis, and the collection of information as to all factors bearing upon the prevalence and distribution of the disease.

Since 1916 the Board of Education has approved of certain children with early Pulmonary Tuberculosis being sent to the Holt Sanatorium for Children under the Elementary (Defective and Epileptic Children) Act, 1899, and fixed and sanctioned a fee of 18s. per week in respect of each child sent for treatment. Since then, owing to increased cost of subsistence, the Education Committee has had to pay 35s. per week per child.

With regard to the treatment of cases of surgical Tuberculosis, the Board of Education, on April 1st, 1920, wrote that after consultation with the Ministry of Health on the matter it had been decided that the treatment should be provided by the County Council in their capacity as Public Health Authority, and not in their capacity as Local Education Authority—so in future all such cases will be referred to the Public Health Committee for action.

We have on our register of Tuberculous School Children since April, 1919, 41 cases of Pulmonary Tuberculosis, 47 suspected Pulm. T.; 80 cases noted as Tb. Glands, 20 cases noted as Osseous Tb., 11 cases noted as Abdl. Tb., and 10 others, making a total of 209 cases. These will all need to be seen by the Tuberculosis Officer for his advice as to treatment. Some may require Hospital treatment (surgical), for which arrangements will need to be made.

To enable the Tuberculosis Officer to cover any decent proportion of the cases awaiting his attention he will need to be provided with a motor-car. Dr. Christopherson can drive himself and has garage accommodation. He also has to visit at the Stanninghall Colony three days a week, at any rate at present. He needs in addition to pay at least 15 visits a week to outside patients in all parts of the County. Without a motor-car, as at present, he finds he is not able to do even half this number. A small two-seater will meet his requirements.

The Ministry of Health has definitely instructed the Norfolk Insurance Committee to cease all provision made for dependents of insured persons. This means the deprivation of 14 persons of shelters hitherto supplied by the Insurance Committee, while a great many more are deprived of the extra nourishment in the form of eggs, milk, etc., hitherto allowed them by the Insurance Committee.

Sufficient nourishment is one of the essentials in the campaign against Tuberculosis, and it now devolves upon the Public Health Committee to decide what shall be done for these persons who have suddenly been deprived of the assistance they have hitherto been receiving from the Insurance Committee.

In September, 1920, the County Council accepted liability for the treatment of dependents, and agreed to grant shelters to those insured persons for whom the Insurance Committee were unable to provide, and placed a sum of £2,000 at the disposal of the Public Health Committee for Tuberculosis purposes for the last three months of 1920. At the time (September, 1920) there were three cases of dependents undergoing Institutional treatment under the Norfolk Insurance Committee, and 43 dependents receiving domiciliary treatment.

In addition to the 88 shelters used by insured persons the County Council has provided additional shelters for patients reported as urgently needing them on the recommendation of the Tuberculosis Officer.

The Tuberculosis Officer has been provided with a motor-car, and the equipment of a Laboratory has been sanctioned at the Dispensary, The Walk, Norwich.

SECTION VI.

Venereal Diseases.

In January, 1920, an agreement was sealed which the County Council had entered into with the Lynn and West Norfolk Hospital and the Borough of King's Lynn for the establishment and maintenance of an auxiliary clinic at King's Lynn, when approved by the Ministry of Health. A hut has been purchased for the purpose of the clinic, but there has been much delay owing to the Ministry's requirements. Existing arrangements at the Hospital permit of only a few urgent cases being treated at present.

Clinic at Norfolk and Norwich Hospital, Norwich. Medical Officer of the Clinic: Dr. S. H. Long, Physician to the Hospital. Assistant Medical Officer: Mr. T. J. Wright, F.R.C.S. Pathologist: Dr. G. P. C. Claridge. By agreement the Clinic serves the Administrative County of Norfolk, the Norwich Corporation, the Great Yarmouth Borough Council and the East Suffolk County Council.

Pathological examinations made during the year 1919 relating to persons residing in the County of Norfolk totalled 286. Of these 6 were made for private practitioners (2 for the detection of gonococci and 4 for Wasserman re-action). The remaining 280 were made for patients attending at the Clinic (17 for Spirochetes, 120 for Gonococci, 143 for Wasserman re-action). The Norfolk proportion of expenditure for the maintenance of the Laboratory being £109 19s. 8d.

On the 1st January, 1919, 31 patients were under treatment at the centre, 6 males, 25 females. Of these, all except one female (gonorrhœa) were suffering from Syphilis. During the year 1919, of a total of 244 patients treated at the centre for Syphilis, 61 were Norfolk patients; 4 were Norfolk patients of 13 treated for soft chancre; 65 of 230 treated for gonorrhœa; and 9 of 38 for conditions other than venereal. Of a total of 3,642 out patient attendances, 902 were Norfolk County patients. Of a total of 1,064 in-patient days, 291 were Norfolk County patients. Of 22 doses of Salvarsan substitutes given in the out patient clinic, 14 were for Norfolk cases. Of 1,025 doses of Salvarsan substitutes given in the in patient department, 286 were for Norfolk cases. Novarsenobillon (N.A.B.) (in initial doses of 0.3 or 0.45, and final dose of 0.75 or 0.9) was the preparation administered, seven doses being the number usually given in a full course of treatment. The total cost apportioned to the Norfolk County Council was £464 3s. 5d., but three fourths of this is refunded by Government grant.

Travelling expenses (railway fares) were allowed to necessitous patients attending from a distance, for whom necessary treatment would otherwise have not been possible. The establishment of the Clinic at King's Lynn will render it easier for patients in the West of the County to obtain treatment.

At the Dreadnought Hospital, Greenwich, Treatment Centre, 5 Norfolk patients were treated in 1919 (4 gonorrhœa and 1 soft chancre).

It is satisfactory to know that 61 Norfolk persons received important sterilising therapeutic treatment while in a very infective stage of Syphilis, for every such person was a potential cause of many more cases.

The comparatively small number of cases of Gonorrhœa submitting themselves for treatment is a matter for cogitation, because it is generally thought that gonorrhœa is much more prevalent than syphilis. It seems probable that a large percentage of persons suffering from gonorrhœa adopt some method of self-treatment, possibly as a result of previous "experience." Chemists and druggists are now very properly debarred from prescribing treatment for venereal diseases, but there are always ways of circumvention.

SECTION VII.

Isolation Hospital Accommodation.

Small Pox.

In January, 1920, the County Council empowered the Public Health Committee to agree to bear a fair proportion of the cost of cases of Small Pox admitted to the Ipswich Small Pox Hospital from districts in Norfolk on being furnished with an account by the East Suffolk County Council.

Other Infectious Diseases.

The North Walsham U.D.C. has entered into an agreement with the Erpingham R.D. for the use of the latter Council's Infectious Diseases Hospital at Roughton Heath. It is intended to increase the accommodation for this purpose.

In July, 1919, the County Public Health Committee reported that they had received an offer of a site near Dereham for the purposes of a County Isolation Hospital. It was later decided to purchase the site as from October, 1921.

SECTION VIII.

Food Supplies.

Food and Drugs Act. Milk and Cream Regulations.

During the year 1919, 598 samples were submitted to the County Public Analyst. Of these 315 were of cow's milk, 24 of butter, 4 of cream, and the remainder of miscellaneous articles, including evaporated milk, condensed milk, malted milk, dry milk, dried eggs, custard powder, ground ginger, coffee, flour, vinegar, marmalade, curry powder, margarine, lard, baking powder, cocoa, olive oil, non-alcoholic wines, and various drugs. 34 samples of milk, i.e., 10.7 per cent. were adulterated, either as regards deficiency of fat or added water in varying amounts. 3 samples of cream were found to have an amount of boracic acid in excess of the proportion allowed by legislation; 1 sample submitted as olive oil was more than 95 per cent. a mineral oil; 1 sample of treacle was 47 per cent. glucose syrup; 1 sample of black currant wine contained 8 grains per pint of sulphur dioxide as sulphite preservative. When adulteration was such as to be convincing the Public Health Committee ordered prosecution in 20 cases, and administered cautions in 11 others. Fines of varying amounts were inflicted in the majority of cases prosecuted. In a few instances the fines were so small as almost to put a premium on dishonesty. In others they were fairly punitive and admonitory.

All samples of milk, cream, and butter were tested for preservatives.

In King's Lynn M.B., where there are 10 slaughter houses, a considerable amount of meat was seized, also of fish, and a small amount of cheese, butter and bacon.

In the Walsingham R.D. the report of the Sanitary Inspector, incorporated in the report of the Medical Officer of Health, shows that the 12 slaughter houses in the district were duly visited and meat inspected. 8972 lbs. of food-stuffs were condemned and destroyed—including 6 tuberculous bovine carcasses.

All workshop bakehouses (25) were cleansed every 6 months as required by the Factory and Workshops Act, 1901.

Under the Cowsheds, Dairies and Milkshops Order, 1885, 50 inspections were made of premises registered under the Order. The milk trade of the district is on the increase, 922 cows being kept as against 781 in 1914.

In the Wayland R.D., slaughter houses, bakehouses, dairies, cowsheds and milkshops, were regularly inspected—one carcase (bovine) was found tuberculous.

Thetford R.D. reports an increase in the number of cowsheds and dairies registered.

Swaffham R.D. reports an increase of 4 premises under the Dairies, Cowsheds and Milkshops Order, 37 in all. Still too many sheds without proper drainage or floors. The Medical Officer of Health again urges the adoption of model regulations.

St. Faiths R.D. Only one case of unsound meat.

Mitford and Launditch R.D. 9 carcasses of beef and 5 of mutton condemned. 6 of them were tuberculous.

Freebridge Lynn R.D. 199 lbs. of frozen beef and 77 lbs. of frozen mutton condemned. Legal proceedings were taken in connection with 14 pig carcasses unfit for food, the Court decided that there was no exposure for food. The carcasses were condemned and forfeited.

Many of the cowsheds are defective.

Loddon and Clavering R.D. One carcass (pig) condemned. Recommended that advertisement and placards should be issued drawing attention to the necessity of registration as cow-keeper.

Henstead R.D. Several carcasses condemned after examination at request of a wholesale butcher.

Forehoe R.D. Bye-laws to come into force to facilitate administration of Dairies, Cowsheds and Milkshops.

3 tubercular carcasses condemned.

Erpingham R.D. Slaughter houses and bakehouses inspected quarterly.

Depwade R.D. Condemned food stuffs includes 1 carcass of beef. A number of dairies and cowsheds have had improvements to drainage and cleanliness.

Blofield R.D. Supervision of slaughter houses improved by new Bye-laws (1917). Regulations in force for Dairies, Cowsheds and Milkshops.

Aylsham R.D. A carcass (sheep) and hind-quarter (bovine) condemned. Dr. Back, Medical Officer of Health, comments on the position of existing slaughter houses and the objectionable "blood hole" frequently found. His experience is that, in rural areas, where there is no public water supply nor sewers, it is better to have no drain leave the slaughter house—but to have the blood and washings collected in a sunk receptacle in the floor from which they can be baled out into a covered cart for removal immediately after slaughtering. The chief advantage of bye-laws would be in respect of new premises.

Regulations re Dairies, Cowsheds and Milkshops are in force—but the greater number are below the standard demanded. Registration fell into disuse during the war, but posters have been exhibited drawing attention to the requirements, and drawing special attention to Sec. 7 of the D.C. and M. Order of 1885.

Cromer U.D. 2 carcasses (bovine) tuberculous condemned and burnt.

Diss U.D. 1 carcass (lamb) destroyed.

New Hunstanton U.D. 287 lbs. meat condemned (putrefactive).

Swaffham U.D. 354 lbs. meat condemned.

Sheringham U.D. A Public Abattoir is in contemplation.

Walsoken U.D. A deficiency in the milk supply.

With the exception of Walsoken, the districts reports state there was a sufficiency of food—except in one or two seaside resorts in the season.

The coming into force of the Milk and Dairies (Consolidation) Act, 1915, postponed until within one year of the termination of the war, will confer new duties and powers upon Sanitary Authorities, including the annual licensing of dairies. This will greatly augment the practical value of the inspection of dairies.

War Pensions Act.

In 1916-17 the County Medical Officer of Health acted as Hon. Secretary to the Disablement Committee, of which Sir Hugh Beever was Chairman.

Up to the time that a paid Secretary to the War Pensions Committee was appointed in 1917, the main labours of the Disablement Committee were directed to getting full information as to the physical health and condition of any discharged soldier not at work; at the same time they enquired as to whether he was receiving medical attendance and due allowances, and arranged for periodical reports so long as disablement continued. A very small number required hospital treatment; a few special treatment—such as massage—at their homes, or electrical treatment in the out-patient department of the hospital. For some cases of shell-shock further treatment was required than was available in the County.

Over 500 cases were dealt with during this preliminary stage. As requested by the Committee, the Chairman and Hon. Secretary went into every case not at work to determine what enquiry and steps were called for to promote their welfare. Reports were arranged for from parish representatives and local doctors, and Norwich consultants by arrangement.

The Committee were very grateful to the Norwich consultants for their kindness in giving opinions without charge until other arrangements were organised by the Ministry of Pensions.